English epenthesis in *lC* and *rC* clusters

Areal effect or drift?

Pavel Iosad   Warren Maguire

ICEHL XX

1 Epenthesis and areality

1.1 Epenthesis in Irish English

- Epenthesis in liquid+sonorant clusters, especially /lm/, is a well-known, indeed stereotyped feature of Irish English
    - Also commonly found in /rm/, and in /rn/ and /rl/ in some dialects
    - *film* [ˈfɪləm], *farm* [ˈfaɹəm], *corn* [ˈkɔɹən], *girl* [ˈɡɛɹəl]
    - Almost always ascribed to Irish influence (e.g. Joyce 1910, Adams 1948, Barry 1982, Hickey 1986, Pilch 1990, Ó hÚrdail 1997, Kallen 1997, Ó Baoill 1997, Corrigan 2010, Cunningham 2011)
- 'By a sort of hereditary custom this peculiarity finds its way into our pronunciation of English.' (Joyce 1910, p. 96)
- 'A process that has been borrowed from Irish where it is obligatory' (Ó Baoill 1997, p. 84)

1.2 Epenthesis as an 'areal feature' in Ireland

- Hickey (2004, p. 41) describes epenthesis as an 'areal feature of both Irish and English in Ireland'
    - This would seem to imply *convergence* (Hickey 1999)
    - But convergence from what, to what?
    - Is epenthesis in Irish English similar to epenthesis in Irish?
    - Was epenthesis borrowed from Irish into Irish English?
    - Was there already epenthesis in the English (and Scots) input varieties to Irish English?
    - Cf. the criteria in Thomason (2010)
- Braidwood (1964) and Harris (1997) note similarities between epenthesis in Irish English and epenthesis in English and Scots in Britain

2 Epenthesis in the languages of Britain and Ireland

2.1 Irish

- See e.g. Ó Siadhail (1989); Ní Chiosáin (1999)
- Basic rule: insert a vowel between a sonorant and a consonant: *bolg* 'belly' [bʌləg], *dorcha* 'dark' [dʌrəxə]

  - …unless the consonants are homorganic: *iolra* 'plural' [ʌl(*ə)rə]…
  - …or the second consonant is a voiceless stop: *olc* 'evil' [ʌl(*ə)k]

- The vowel is [ə] or [ɪ], depending on consonant palatalization
- Restrictions on epenthesis are *phonological*

  - Blocked after long vowels and diphtongs: *léargas* 'vision' [lʲeːr(*ə)gəs], *dualgas* 'duty' [duəl(*ə)gəs]
  - Blocked before another two syllables: *scolgarnach* 'cackling' [skʌl(*ə)gərnəx]

- No morphological restrictions, no restriction to stem-final codas: *airgead* 'money' [arʲɪgʲəd]

2.2 Scottish Gaelic

- See e.g. Clements (1986); Bosch & de Jong (1997); Hind (1996); Wentworth (2005)
- Similar conditioning to Irish:

  - *dearg* 'red' [t͡ʃɛrɛk], *doirbh* 'difficult' [tɤðʲɤv]
  - Not in *olc* 'evil' [ɔḷk], *dòrn* 'fist' [toːrn]
  - Not after long vowels/diphthongs: *miorbhailt* 'miracle' [mĩɑrvaʎt͡ʃ], *mòrchuis* 'splendour' [moːrxuʃ]

- Vowel is generally a copy of the stressed vowel, or influenced by surrounding consonants: *builg* 'bellies' [pulʲukʲ] or [pulʲikʲ], rarely generalized [ə] as in Irish
- Unlike Irish, does not straightforwardly count as a syllable:

  - Speaker intuitions (e.g. Borgstrøm 1937, Hammond et al. 2014)
  - Morphophonology (Smith 1999, Iosad 2015)
  - Inert in metre: *níor ghlac cliath, colg no gunna* is a 7-syllable line

2.3 Epenthesis in Gaelic: summary

- Original situation is probably more like Scottish Gaelic

  - Regular echo vowel
  - Metrical invisibility, including resistance to syncope

- Cf. Greene (1952) on the 'middle quantity' of Old Irish tradition
- First instantiations possibly already in Ogam Irish (Eska 2010)

2.4 Brythonic Celtic

- See e.g. Simon Evans (1964); Schumacher (2011)
- Widespread in Middle Welsh, particularly in /lv/ and /rv/: <palyf> 'palm', <aryf> 'weapon'
- Also in /lm rm/, though these are rare in Middle Welsh, and /ðv/ <dedyf> 'law', <gwdyf> 'neck'

  – Mostly word-final, albeit with some cyclicity <gwdyfeu> 'necks'
  – Vowel begins as schwa, later echoes preceding vowel: <araf> 'weapon'
  – Not regular, much variation

- Modern dialects (Iosad 2017): copy epenthesis, irregular within and across dialects, adds a syllable

  – Nantgarw *ffurf* 'form' [fɪrv] but *barf* 'beard' [baːrav]
  – More examples with /lm rm/: *ffwrm* 'bench' [fuːrʊm], *helm* 'corn stack' [eːlɛm]

- No epenthesis in clusters like /ln rn/
- Breton (Jackson 1967): some epenthesis in /rk lx rx rz lz/ but not always clearly syllabic

2.5 Irish English and Highland English

- Irish English (Maguire 2018)

  – Epenthesis in liquid+sonorant clusters, especially /lm/ *film* and /rm/ *warm*
  – Also in /rl/ *girl* and /rn/ *corn* in some dialects
  – Occasionally also in /ln/ in *kiln*, though this replaces the traditional pronunciation (shared with English and Scots) *kill*, so is not of long standing

- In stem-level coda position *only*

  – Mid Ulster English *fil*[ə]*m~fil*[ə]*ming*, *war*[ə]*m~war*[ə]*mer* but not in *helmet*, *German*
  – MUE *Ar*[ə]*mstrong*, Roscommon English *cu*[rəlj]*ew* (Henry 1957)

- Highland English

  – As far as we can tell, the same patterns
  – Epenthesis only in /lm/, /ln/ and /rm/ (Shuken 1984, p. 160)

2.6 Early Modern English

Ring the alarum-bell. Murder and treason! (Macbeth II.3.49)

- Jespersen (1909, pp. 274, 362) hypothesises that this vowel is instead the result of an emphatic pronunciation of trilled French [r] in this word.
- But that cannot explain Shakespeare's spelling of *film* as <philome> in *Romeo and Juliet* (I.4.63), nor epenthesis in /rm/ in other words in other sources

- Two of Shakespeare's contemporaries also provide evidence for epenthesis in liquid+sonorant clusters in Early Modern English

  – William Bullokar (1585) records epenthesis in *carl*, *elm*, *helm*, *storm* and *turn* in his *Booke at Large* (Kökeritz 1953, p. 292); see also Dobson (1957, p. 913)
  – Philip Henslowe spells *warm* as <warem> in his diary (Greg 1904, p. 38); see Kökeritz (1953, p. 293).

2.7   Modern English

- Epenthesis is highly characteristic of traditional north-east English dialects (Ellis 1889, Orton & Dieth 1962, Rydland 1998), and some neighbouring northern English dialects

  – In /lm/, /rm/, /rn/, /rl/, /rd/ (*word*) and /rz/ (*Thursday*)
  – Beyond that, epenthesis is widespread in /lm/
  – Also not uncommon in /rm/

- Otherwise rather sporadically attested in modern English dialects

  – Contrast consistent epenthesis in /rl/ in Dent (Yorks.) and Naunton (Gloucs.)
  – Found in stem-level coda position only

2.8   Modern Scots

- The prevalence of epenthesis in modern north-east English dialects is undoubtedly connected with ubiquitous epenthesis in liquid+sonorant clusters in Scots, north of the border
- [fɛɫəm] *film*, [eːɾəm] *arm/airm*, [boɾən] *born*, [kʌɾəɫ] *curl*
- See Maguire (2017)

- Epenthesis in Scots also only in (stem-level) coda position, just as in English
- Though of course it is much more widespread and common in Scots

2.9   Middle English and Older Scots

- Lass, Laing & Alcorn (2013): 'Sonorant cluster vowel epenthesis' (SCVE)
- 'Insertion of an epenthetic vowel between two consonants, one of which must be a sonorant'
- Middle English Dictionary http://quod.lib.umich.edu/m/med/

  – /lm/: *elm* (<ellem>), *whelm* (<quilum>)
  – /rm/: *alarm* (<alarom>), *arm* (<arum>), *farm* (<verem>), *harm* (<harem>), *storm* (<storem>), *worm* (<wirem>)
  – /rl/: *churl* (<cherel>), *earl* (<erel>), *pearl* (<perel>), *smerl* 'ointment' (<smerel>), *thirl* 'hole' (<thirile>), *whirl* (<whoril>)
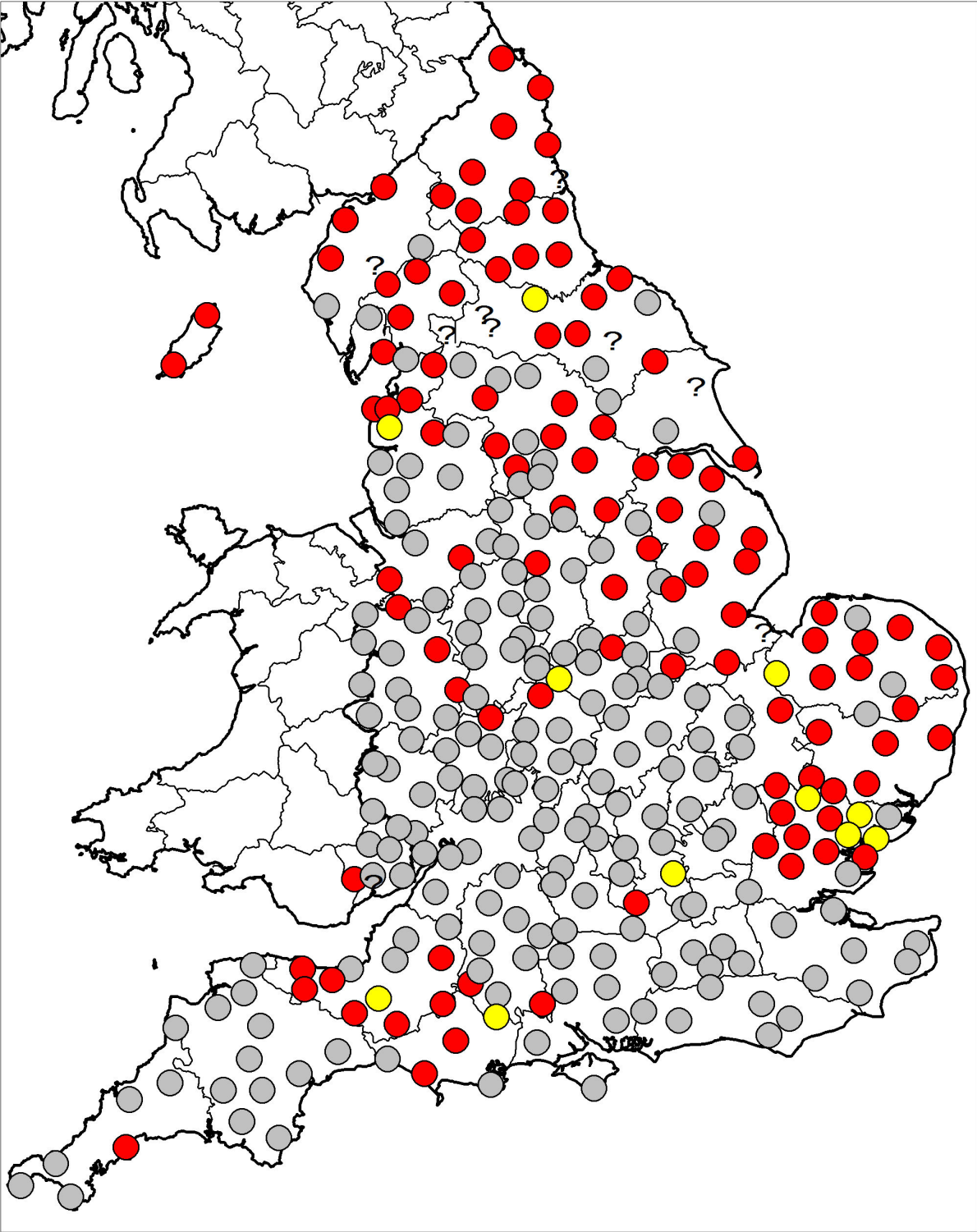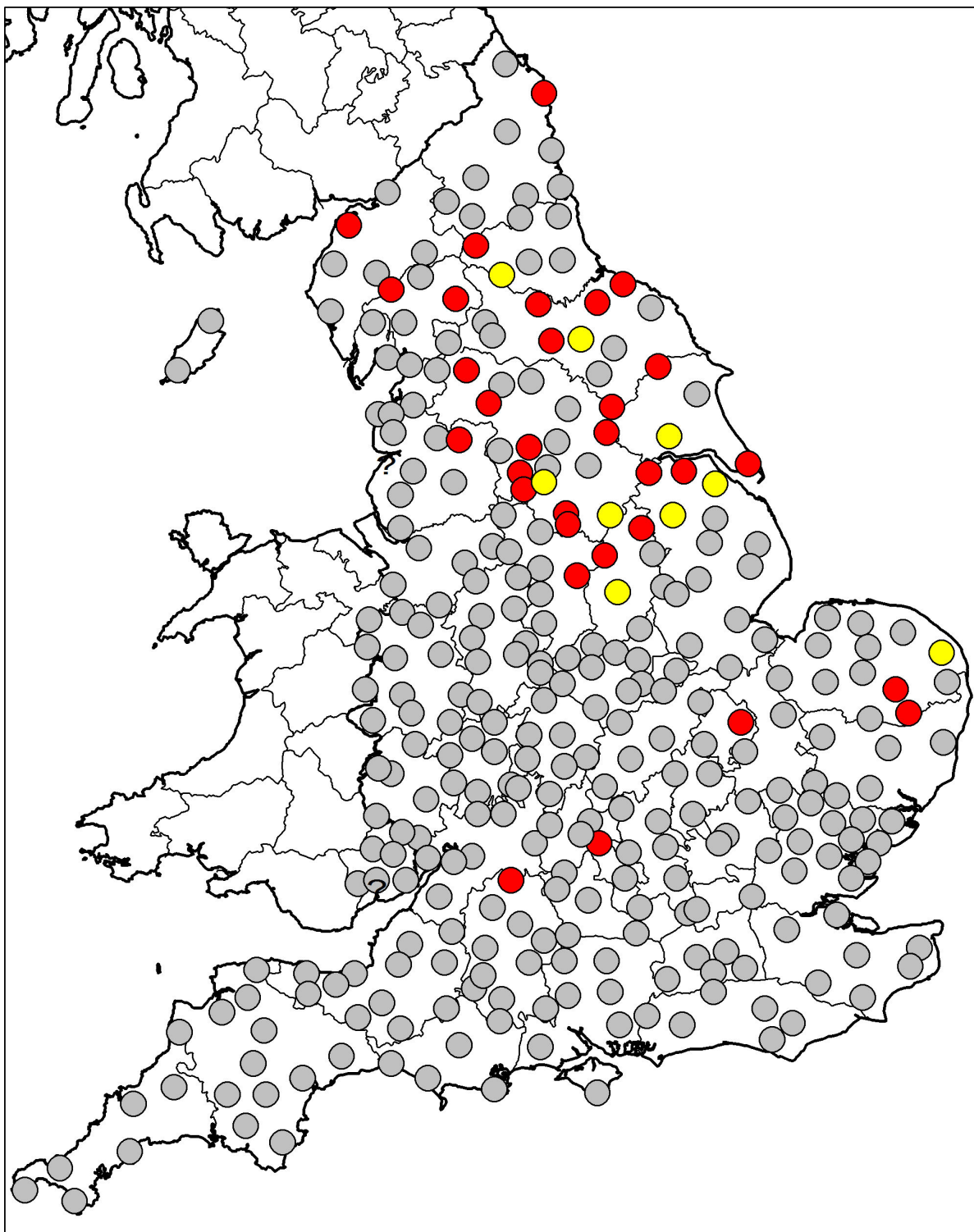
Figure 1: Epenthesis in *elm* in the SED

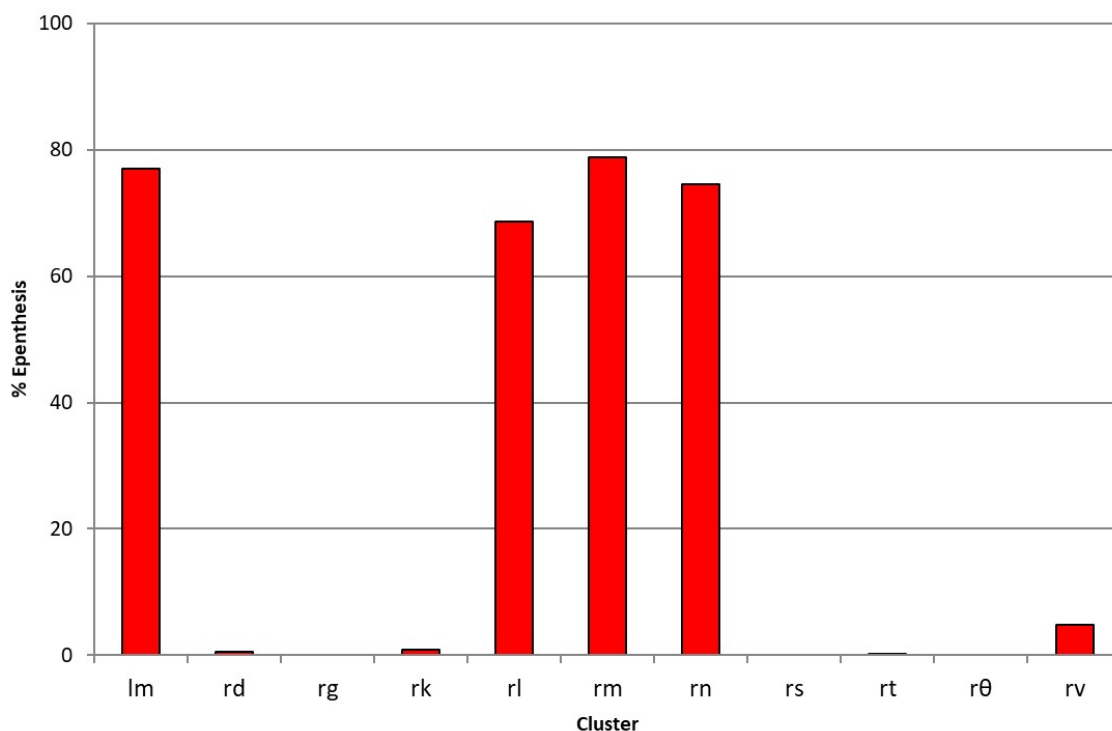Figure 2: Epenthesis in *worm(s)* in the SED

Figure 3: Prevalence of epenthesis in Scots

- /rn/: *barn* (<baren>), *bairn* 'child' (<berun>), *corn* (<coren>), *fern* (<feren>), *morn* (<moren>), *quern* (<queren>), *scorn* (<scoren>), *sharn* 'dung, manure' (<sherren>), *stern* (adj.) (<steren>), *thorn* (<thorun>), *urn* (<urin>), *warn* (<waran>)
- Occasionally in other clusters (e.g. in /rd/ in *word*, in /rk/ in *mark*)

• Cf. Older Scots <fereme> *firm*, <eril> *earl*, <turyn> *turn*, <thurisday> *Thursday*
• Jordan (1934, pp. 147–148)

- Early epenthesis of <i>, <e>, <y> in <rd rth rl rn>, mostly in the North, which later disappears
- Later epenthesis of back vowels before <w>, sometimes also <m>, <n>, <f>: <arum> *arm*, <oref> 'cattle', <wurem> *worm*, described as rare.

2.10   Old English

• Several kinds of epenthesis according to sources, see especially Campbell (1959, §320–322) and Hogg (1992, §6.34–6.37)
• Early epenthesis between a sonorant and a fricative

- Mostly before dorsal/glottal
- Vowel mostly agrees in backness with stressed vowel
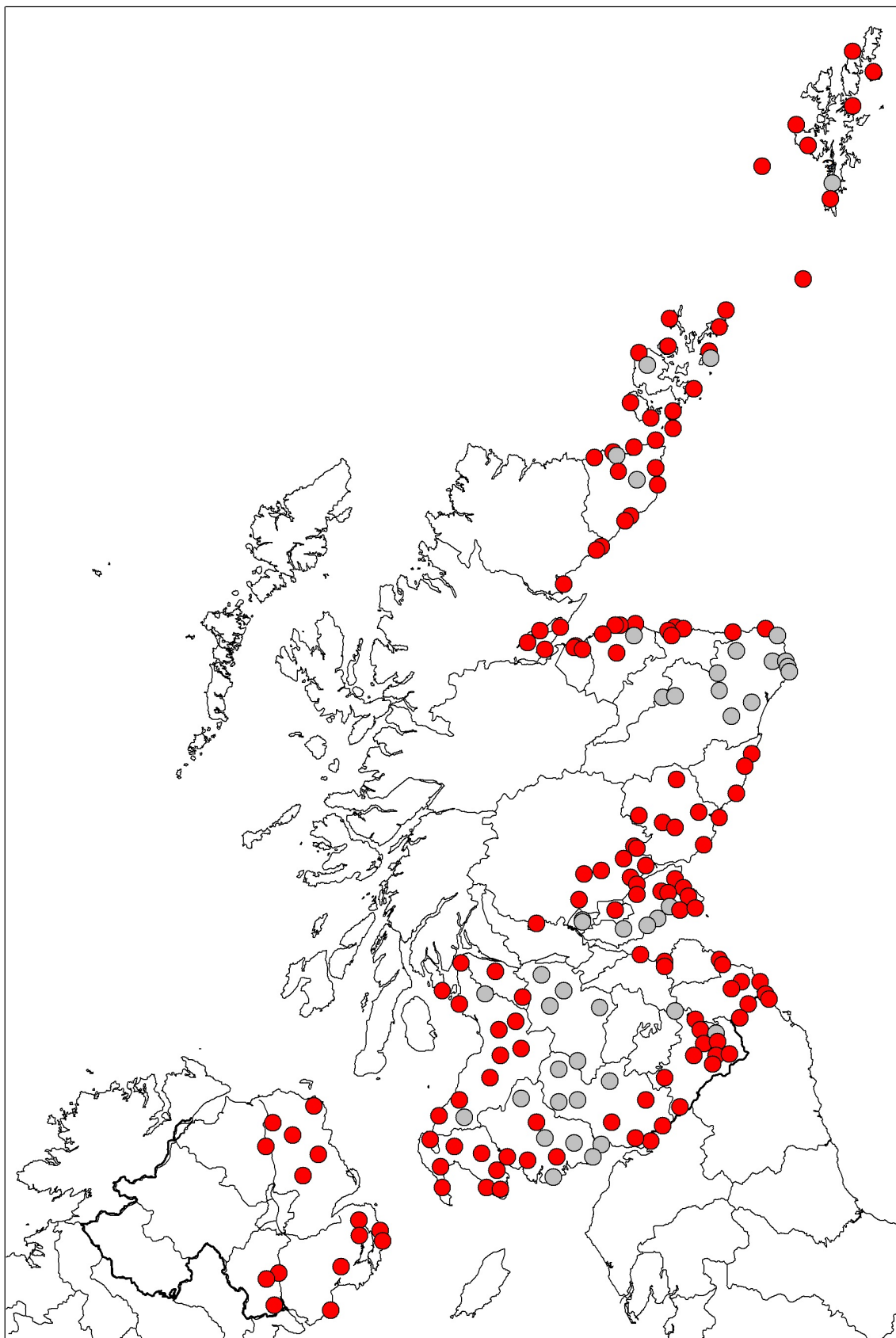- <ðerih> *through*, <ġewarahtæ> 'made', <berecht> *bright*

Figure 4: Epenthesis in /lm/ in unpublished LSS materials
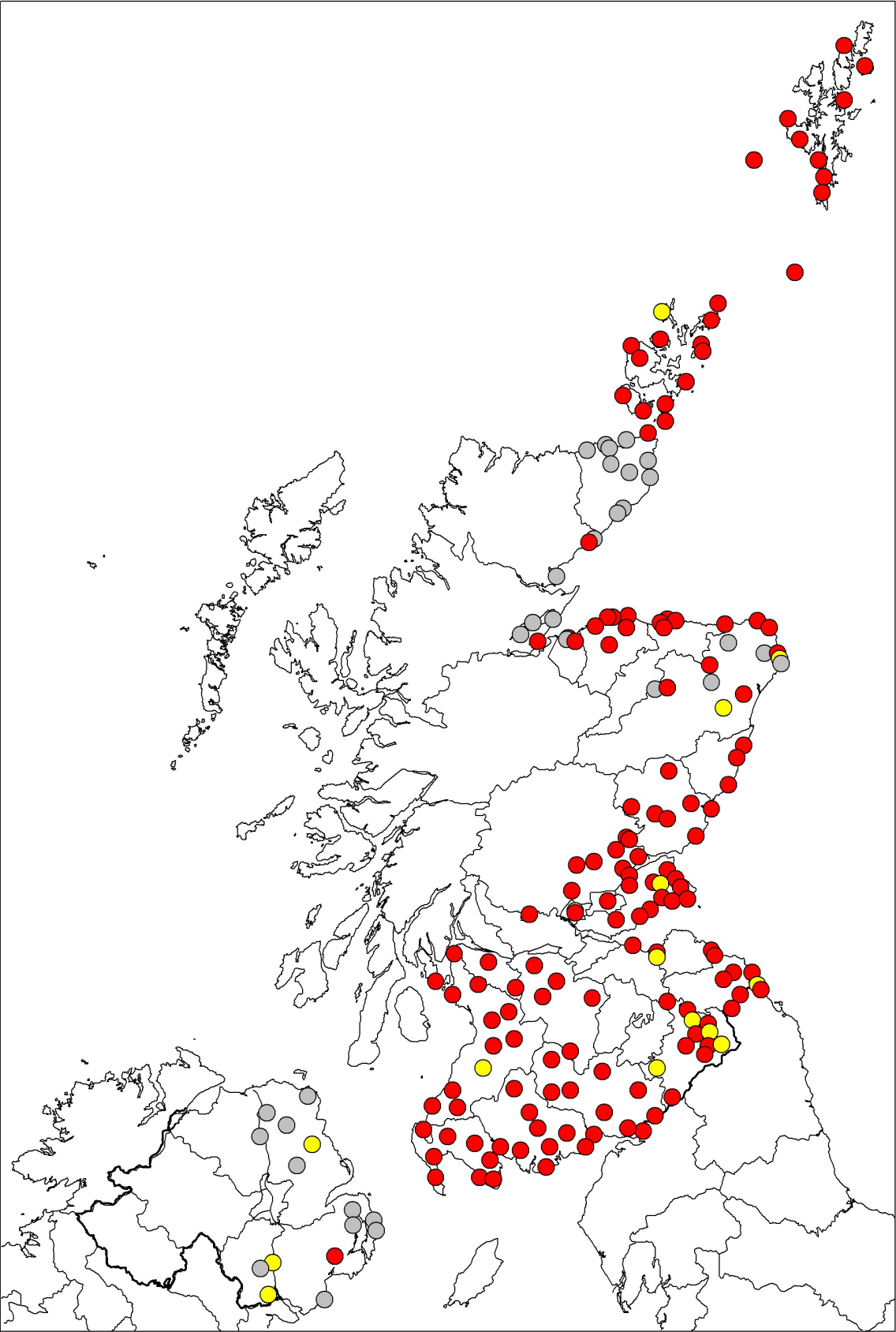
Figure 5: Epenthesis in /rm/ in unpublished LSS materials

- But also <wylif> 'she-wolf'
- Persists (or re-occurs?) in later Northumbrian, e.g. <burug> *burgh*, <fyrihto> *fright*, but also <culufro> *culver* 'dove'
- Very rarely in other later dialects: <byric> *birch*, <weoruc> *work*

- Later West Saxon epenthesis of *i*, *u* after light syllables in *Cj*, *Cw* clusters

  - <byri(g)> *burgh*, <herigas> 'armies', <swaluwe> *swallow*
  - Mostly late; very rare in other dialects

- No or very few OE examples for /ln/ (except <elin> *ell* 'forearm', if this is not preserved from *elinu-*), /rm/, /lm/, /rl/ (Ringe & Taylor 2014, §6.9.5)
- The data is scant, but mostly consistent with the analysis that OE epenthesis targeted morpheme-final codas
- Clusters targeted

  - Change over the course of the OE period
  - Different from Middle English and Modern English
  - Effects of OE epenthesis obscured by later syncope and vocalization

- Hogg (1992, §6.42): '[The] evidence would suggest that it is a persistent and continuing variation in OE'
- Similarly, Ringe & Taylor (2014, p. 332): '[T]here could have been robust, stable variation in the phonetics of these unstressed syllables between speech communities, within speech communities, and even in the speech of single individuals'

2.11   Epenthesis in Insular West Germanic: conclusion

- Found throughout the history of English and Scots, from the Old English period onwards
- Though the details vary by period and location, epenthesis occurs in:

  - Liquid+consonant clusters in (stem-level) coda position
  - Especially in liquid+sonorant clusters

- Prominent in Middle English/Older Scots, Modern Scots, and modern north-east English dialects
- Also attested in Early Modern English and sporadically in Modern English dialects further south

  - However, epenthesis in /lm/ is widespread (or at least was until recently)

- Irish English and Hebridean English epenthesis replicates epenthesis in Anglic, does not match Gaelic patterns

  - Triggering clusters
  - Restriction to coda position

- So where does it come from?

3   Epenthesis in Germanic

3.1   Old High German

- Epenthesis (*Sproßvokal*) is widespread in Old High German from the oldest attestations and increasing over time (e.g. Schmidt 1871, Reutercrona 1920, Braune 2004)
- Usually *a* or *o*, but can agree in quality with surrounding vowels (more often following than preceding)

    – /lh rh/: <bëraht> 'bright', <duruh> <durah> *through*, names in <Alah-> (Gothic *alhs*)
    – /rw lw/, rarely /sw/: <farwa> <farawa> <farowa> 'colour' (*Farbe*)

- Larger range of clusters in Upper German

    – /rk rh rg/ and /rb rp rf rm/: <werah> *work*, <waram> *warm*, <perege> 'mountaines' (*Berge*)
    – More rarely /rl/, even more rarely /rn/: <charal> *churl'*

3.2   Middle and Early New High German

- In Middle High German (Michels 1979), epenthesis remains in many of the same clusters, but now also including /rn/

    – <koren> *corn*, <werec> *work*, <starib> 'die!' (*starb*), <arebeit> 'work' (*Arbeit*)
    – Alemannic and Rhine Franconian: syncope of unstressed vowels after a short vowel + /r l/ targets both non-epenthetic and epenthetic vowels
        * Epenthetic: <arm> for OHG <aram> 'poor'
        * Non-epenthetic: <wir nern> 'we approach' (morphologically <-en>)

- Early New High German (Ebert et al. 1993, §3.7.4)

    – Frequent in /rb rx/ especially in Bavarian: <heribst> *Herbst* 'autumn', <kirich> *Kirche* 'church'
    – /lx/ in <milich> *Milch* 'milk'
    – More rarely /rf rg/ (*werifen* 'throw', *berig* 'mountain'), /r + coronal/ (*geburit* 'birth', *hirise* 'millet'), /lb lg/ (*kalib* 'calf', *foligt* 'follows')

3.3   Modern German

- Epenthesis is pervasive in German dialects, especially Upper and Middle German
- Not in the standard language
- Schirmunski (1962, pp. 401–402)

    – Much variation, but examples like *dorəf* 'village', *beriç* 'mountain', *warəm* 'warm', *šdarik* 'strong', *haləm* 'straw', *khęriç* 'church', *woləf* 'wolf', *khåləb* 'calf'
    – Often word- rather than stem-final: *warəm* but *warmər*
    – Less common in *rn* (*štęrən* 'star'), *n* + obstruent (*finəf* 'five')

- Rare in non-final position except in Ripuarian: *ę̃rəvə* 'to inherit', *hę̃ləpə* 'to help'
- Liberman (1992): much variation in whether svarabhakti feeds open syllable lengthening (both <do:rəf> and <dorəf>), presumably linked to chronological variation
- Found in Luxembourgish standard language, although formerly more so than now (Gilles 2014): *Kallef* 'half', *wellech* 'whichever', *Vollek* 'people', *Hallem* 'culm', *fënnef* 'five', *Kärel* 'guy'
- Found in Yiddish (Jacobs 2005) in /r l/ + velar clusters (*štarək* 'strong', *barək* 'mountain', *milix* 'milk') but not in medial position (*štarkə* 'strong-PL'), also lexicalized remnants like *finəf* 'five'

3.4   Old Saxon & Middle Low German

- Old Saxon (Gallée 1910): between /r l/ and certain consonants, vowel often copies either from the left or the right
  - /rp rƀ rw/: <skarapun>, <araƀit> 'work', <staraf> 'died', <gegariuui> 'clothes'
  - /rm rn/: <uuaram> 'warm', <Berenmarus>
  - /rk rg rx/: <foraht> 'fear', <sorogon> 'sorrows-DAT', <giuuerekot> 'does'
  - /lx lw/: <bifelahan> 'recommend', <baluuues> 'evil-GEN'
- Middle Low German (Lasch 1914, p. 123):
  - Continuation of the Old Saxon pattern: <sceref> 'sharp', <barumhertlike> 'gracious', <bedereven> 'spoil'
  - 'New' epenthesis during the MLG period, mostly in <lC> but also in some other clusters: <mellik> 'milk', <süllik> 'such', <werrelt> 'world'
- Schirmunski (1962): almost not found in modern Low German

3.5   Dutch

- Characteristic of Dutch since the earliest period (van Bree 1987)
- Middle Dutch (van Loey 1976)
  - /r l/ + tautosyllabic consonant: <berich> 'barrow', <staref> 'died', <arem> 'poor', <herefst> 'autumn', <helecht> 'helps', <mellec> 'milk'
  - Also between /r/ + onset consonant: <arebeit> 'work', <jereghetide> 'season' (MDu *jaargetijde*)
- Modern Dutch (Kirstein 2018): between /r l/ and a consonant in a complex coda, except when the consonant is a homorganic stop
  - *arm, help, harp, herfst* 'autumn', *elf* 'eleven', *melk, werk, alg* 'alga', *erg* 'very', *urn, hoorn*
  - Not **hart,* **halt,* **hals,* **damp,* *bank
- Variable (Warner et al. 2001)
- Mostly restricted to codas, but can occur across a syllable boundary: *filmer* 'camera operator', *ergens* 'somewhere'

3.6 Frisian

- Old Frisian (Steller 1928), usually *e* or *i*: <hallef> 'half', <erm> <erim> 'poor', <dolech> <dolich> <dolch> 'wound'
- West Frisian (Visser 2017): variable epenthesis in non-homorganic *rC lC* clusters: *kalm* 'calm', *term* 'intestine', *wylch* 'willow', *skelk* 'apron', *skulp* 'shell'
- North Frisian (Århammar 2001): much dialectal variation, cf. *salleff* 'self' but *dösalven* 'the same'

  - Common in /lg rg/: *Halich* 'island' (OE *healh*), *fori(g)-* 'furrow'
  - Less common between /r k/ and /m w/: *hualew* 'half', *warem, sterew* 'to die'
  - Even less common in /lr lp/, and /ln rn/ (after a long vowel): *hallep* 'to help', *eelen* 'elbow'
  - Also possible in /rl/: *kiarel* 'guy'

3.7 North Germanic

- Runic inscriptions: a few possible instances of epenthetic *a*: <worahto> 'made' (Tune), <-wulafʀ> *-ulfr* (Istaby); see Noreen (1923); Haugen (2012)
- Old Swedish: handful of examples in /rj rð rf/ (Noreen 1904, §159–163); no epenthesis in liquid + sonorant clusters: <karl>, <barn> (Wessén 1958, §62)
- Norwegian

  - Very few examples of Old Norwegian spellings with epenthesis in /rð rn rl/: <gareðe> 'enclosure-DAT.SG', <hveren> 'who-ACC', <æreleghr> 'honest', with unclear interpretation (Seip 1934, pp. 124–125)
  - Middle Norwegian (Petterssen 1975): isolated examples of epenthesis with vocalization in /rɣ lɣ/
  - Many clusters where epenthesis is observed elsewhere undergo other changes: /rð/ > /ʈ/, /rn/ > /dn/ or /ɳ/, /rl/ > /dl/ or /ɭ/

3.8 Danish

- Old Danish (Brøndum-Nielsen 1928, §220–224)

  - Usually <u> or <i> depending on context, unlike the -C_R# epenthetic vowel <æ>, later <e>
  - /rk rɣ rm rn/: <danmarich> 'Denmark', <sterikt> 'strong-NEUT', <tørigh> 'marketplace', <farughe> 'colour', <arum> 'arm', <baren> 'child'
  - /lk lɣ lf/: <fyligh> <fulughæ> 'following', <talugh> 'tallow', <halluff> 'half', <galugh> 'gallows'

- Danish dialects (Hansen 1962): vowel often preserved with loss of final consonant

  - /lf lɣ/ epenthesis is 'especially common' (*særlig almindelig*): <sielæf> 'self', <skaleff> 'shook', <talugh> 'tallow', dialectal *kalle* for <Kalleff> 'calf'

– /rf rɣ/: dialectal forms like *tørre* for <tørff> 'turf', *spurre* for <spurw> 'sparrow', *bjerre* for <bieregh> 'mountain'

3.9   Epenthesis in Germanic

- Much variation in what clusters are affected, within and across languages and time periods

    – Some languages target liquid + sonorant
    – Some languages target liquid + dorsal
    – Some languages target non-homorganic sequences

- Preference for domain-finality
- Continuous and persistent: we can often discern several iterations of epenthesis
- Lexically and phonologically irregular: proceeds by lexical diffusion, nowhere clearly *lautgesetzlich*
- Epenthetic vowels tend to build syllables of their own
- Epenthetic vowels are often subject to syncope processes alongside non-epenthetic medial vowels
- This agrees with English but not with Gaelic

4   Discussion

4.1   Why epenthesis?

- Motivation by sonority (e.g. Hickey 1985, 2014): descriptively plausible, but:

    – Post-sonorant epenthesis is clearly not the same process as T_R# epenthesis
    – Insufficient to explain differences in triggering clusters

- Another facet of vowel lengthening (Ó Baoill 1980, Liberman 1992):

    – Unclear phonetic precursors

- Alternative to smoothing in the elimination of back glides (Howell & Somers Wicka 2007):

    – Could cover (some of) Old English, but it's not clear to us if/how this extends to other systems even in English itself

4.2   Epenthesis as excrescence

- We endorse the analysis of epenthesis in sonorant + consonant clusters as *excrescence*
- See Levin (1987) and Hall (2006)
- Retiming of the vocalic gesture associated with the sonorant (Hind 1996, Hall 2006, Operstein 2010)
- Not the same phenomenon as sonority-driven epenthesis (e.g. in T_R# contexts)

    – Notably, epenthetic and excrescent vowels can be distinguished both phonologically and phonetically in some languages (Levin 1987, Smith 1999, Hall 2013)

- We suggest, following the lead from Hogg (1992); Ringe & Taylor (2014), that a phonetic tendency to excrescence is/was common to much of Germanic, and is inherited in English

4.3   Germanic epenthesis

- The phonetic tendency is universal, or at least widespread across northwest Europe
- Variable epenthesis would have been found in Proto(-North-West)-Germanic, and inherited in many languages
- Excrescence *can* phonologize as a regular rule

    – We suggest this is what happened in Gaelic
    – This is likely what happened in some Sámi languages (Engstrand 1987)

- This is *not* what happened in Germanic

4.4   Conclusion

- Epenthesis in English and Scots is an instantiation of a phonetic tendency common in Germanic
- Irish English epenthesis is directly inherited from English (and Scots in the north)
- This tendency has variably been present throughout the history of Germanic
- The repeated occurrence of epenthesis in Germanic represents parallel development ('drift') via inheritance of a variable process (Joseph 2013)
- To the extent English epenthesis is an areal phenomenon, it is an extension of an area from the continent, not part of a Britain and Ireland area

References

Adams, George Brendan. 1948. An introduction to the study of Ulster dialects. *Proceedings of the Royal Irish Academy*: Section C: Archaeology, Celtic Studies, History, Linguistics, Literature 52. 1–26.

Århammar, Nils. 2001. Grundzüge nordfriesischer Sprachgeschichte. In Horst Haider Munske (ed.). In collab. with Nils Århammar, Volkert F. Faltings, Jarich F. Hoekstra, Oebele Vries, Alastair G. H. Walker & Ommo Wilts, *Handbuch des Friesischen: Handbook of Frisian studies*, 744–765. Tübingen: Max Niemeyer Verlag.

Barry, Michael. 1982. The English language in Ireland. In Richard Bailey & Manfred Görlach (eds.), *English as a world language*, 84–133. Ann Arbor, MI: The University of Michigan Press.

Borgstrøm, Carl Hjalmar. 1937. The dialect of Barra in the Outer Hebrides. *Norsk tidsskrift for sprogvidenskap* 8. 71–242.

Bosch, Anna R. K. & Kenneth de Jong. 1997. The prosody of Barra Gaelic epenthetic vowels. *Studies in the Linguistic Sciences* 27. 1–15.

Braidwood, John. 1964. Ulster and Elizabethan English. In George Brendan Adams (ed.), *Ulster dialects: An introductory symposium*, 5–109. Holywood, Co. Down: Ulster Folk Museum.

Braune, Wilhelm. 2004. *Althochdeutsche Grammatik*. Vol. 1: *Laut- und Formenlehre*. Ingo Reiffenstein (rev.). Tübingen: Max Niemeyer Verlag.

Brøndum-Nielsen, Johannes. 1928. *Gammeldansk grammatik i spoghistorisk fremstilling*. Vol. 1: *Indledning. Tekstkildernes lydbetegnelse. Vokalisme*. København: J. H. Schultz forlag.

Campbell, Alistair. 1959. *Old English grammar*. Oxford: Clarendon.

Clements, G. Nick. 1986. Syllabification and epenthesis in the Barra dialect of Gaelic. In John Massie Stuart, Koen Bogers, Harry van der Hulst & Maarten Mous (eds.), *The phonological representation of suprasegmentals*, 317–336. Berlin: Walter de Gruyter.

Corrigan, Karen. 2010. *Irish English*. Vol. 1: *Northern Ireland*. Edinburgh: Edinburgh University Press.

Cunningham, Una. 2011. Echoes of Irish in the English of southwest Tyrone. In Raymond Hickey (ed.), *Researching the languages of Ireland* (Studia Celtica Upsaliensia), 207–221. Uppsala: Uppsala University Press.

Dobson, E. J. 1957. *English pronunciation, 1500–1700*. 1st edn. Oxford: Clarendon Press.

Ebert, Robert Peter, Oskar Reichmann, Hans-Joachim Solms & Klaus-Peter Wegera. 1993. *Frühneuhochdeutsche Grammatik*. Oskar Reichmann & Klaus-Peter Wegera (eds.). Tübingen: Max Niemeyer Verlag.

Ellis, Alexander J. 1889. *On early English pronunciation*. Vol. 5: *The existing phonology of English dialects compared with that of West Saxon*. New York, NY: Greenwood Press.

Engstrand, Olle. 1987. Durational patterns of Lule Sami phonology. *Phonetica* 44(2). 117–128.

Eska, Joseph F. 2010–2012. Remarks on intrusive vowels in the Ogam corpus of Early Irish. *Keltische Forschungen* 5. 139–156.

Gallée, Johan Hendrik. 1910. *Altsächsische Grammatik*. Halle & Leiden: Max Niemeyer & E. J. Brill.

Gilles, Peter. 2014. Phonological domains in Luxembourgish and their relevance to the phonological system. In Javier Caro Reina & Renata Szczepaniak (eds.), *Syllable and word languages* (Linguae & Litterae 40), 279–304. Berlin & Boston: De Gruyter.

Greene, David. 1952. Middle quantity in Irish. *Ériu* 16. 212–218. JSTOR: 30007401.

Greg, Walter W. (ed.). 1904. *Henslowe's diary*. Vol. 1: *Text*. London: A. H. Bullen.

Hall, Nancy. 2006. Cross-linguistic patterns of vowel intrusion. *Phonology* 23(3). 387–429.

Hall, Nancy. 2013. Acoustic differences between lexical and epenthetic vowels in Lebanese Arabic. *Journal of Phonetics* 41(2). 133–143.

Hammond, Michael, Natasha Warner, Andréa Davis, Andrew Carnie, Diana Archangeli & Muriel Fisher. 2014. Vowel insertion in Scottish Gaelic. *Phonology* 31(1). 123–153.

Hansen, Aage. 1962. *Den lydlige udviklingen i dansk fra ca. 1300 til nutiden*. Vol. 1: *Vokalismen*. København: G. E. C. Gads forlag.

Harris, John. 1997. Phonological systems in collision in the north of Ireland. In Hildegard L. C. Tristram (ed.), *The Celtic Englishes*, 201–224. Heidelberg: Universitätsverlag C. Winter.

Haugen, Odd Einar. 2012. Frå urnordisk til norrønt språk. Unpublished MS. https://folk.uib.no/hnooh/handbok/ekstra/Urnordisk/Urnordisk-OEH-2012-12-30-v-1-0.pdf.

Henry, Patrick Leo. 1957. *An Anglo-Irish dialect of North Roscommon: Phonology, accidence, syntax*. Dublin: Department of English, University College Dublin.

Hickey, Raymond. 1985. The interrelationship of epenthesis and syncope: Evidence from Dutch and Irish. *Lingua* 65(3). 229–249.

Hickey, Raymond. 1986. Possible phonological parallels between Irish and Irish English. *English World-Wide* 7(1). 1–21.

Hickey, Raymond. 1999. Ireland as a linguistic area. *Ulster Folklife* 45: *Language in Ulster*. James P. Mallory (ed.). 36–53.

Hickey, Raymond. 2004. The phonology of Irish English. In Bernd Kortmann, Kate Burridge, Rajend Mesthrie, Edgar W. Schneider & Clive Upton (eds.), *A handbook of varieties of English*. Vol. 1: *Phonology*, 68–97. Berlin: Mouton de Gruyter.

Hickey, Raymond. 2014. *The sound structure of Modern Irish* (Empirical Approaches to Language Typology 47). Berlin: De Gruyter.

Hind, Kevin. 1996. The structure of epenthesis in Gaelic. *Journal of Celtic Linguistics* 5. 91–119.

Hogg, Richard M. 1992. *A grammar of Old English*. Vol. 1. Phonology. Oxford: Blackwell.

Howell, Robert B. & Katerina Somers Wicka. 2007. A phonetic account of Anglian smoothing. *Folia Linguistica Historica* 28(1/2). 187–214.

Iosad, Pavel. 2015. 'Pitch accent' and prosodic structure in Scottish Gaelic: Reassessing the role of contact. In Martin Hilpert, Janet Duke, Christine Mertzlufft, Jan-Ola Östman & Michael Rießler (eds.), *New trends in Nordic and general linguistics* (Linguae & Litterae 46), 28–54. Berlin: Mouton de Gruyter.

Iosad, Pavel. 2017. Welsh svarabhakti as stem allomorphy. *Transactions of the Philological Society* 115 (2). 141–175.

Jackson, Kenneth Hurlstone. 1967. *A historical phonology of Breton*. Dublin: Dublin Institute for Advanced Studies.

Jacobs, Neil G. 2005. *Yiddish: A linguistic introduction*. Cambridge: Cambridge University Press.

Jespersen, Otto. 1909. *A modern English grammar on historical principles*. Vol. 1: *Sounds and spellings*. Heidelberg: Carl Winter's Universitätsbuchhandlung.

Jordan, Richard. 1934. *Handbuch der mittelenglischen Grammatik*. Heidelberg: Carl Winters Universitätsbuchhandlung.

Joseph, Brian D. 2013. Demystifying drift: A variationist account. In Martine Robbeets & Hubert Cuyckens (eds.), *Shared grammaticalization: With special focus on the Transeurasian languages* (Studies in Language Companion Series 132), 43–66. Amsterdam: John Benjamins.

Joyce, Patrick Weston. 1910. *English as we speak it in Ireland*. London: Longmans, Green & Co.

Kallen, Jeffrey (ed.). 1997. *Focus on Ireland*. (Varieties of English Around the World 21). Amsterdam: John Benjamins.

Kirstein, Anna. 2018. *Schwa epenthesis and schwa deletion*. Taalportaal. http://taalportaal.org/taalportaal/topic/pid/topic_20150914151659461.

Kökeritz, Helge. 1953. *Shakespeare's pronunciation*. New Haven, CT: Yale University Press.

Lasch, Agathe. 1914. *Mittelniederdeutsche Grammatik*. Halle an der Saale: Verlag von Max Niemeyer.

Lass, Roger, Margaret Laing & Rhona Alcorn. 2013–. *Corpus of Narrative Etymologies*. In collab. with Keith Williamson. http://www.lel.ed.ac.uk/ihd/CoNE/CoNE.html.

Levin, Juliette. 1987. Between epenthetic and excrescent vowels. *West Coast Conference on Formal Linguistics (WCCFL)* 6. 187–201. ISSN: 1042-1068.

Liberman, Anatoly. 1992. Vowel lengthening before resonant + another consonant and svarabhakti in Germanic. In Irmengard Rauch, Gerald F. Carr & Robert L. Kyes (eds.), *On Germanic linguistics: Issues and methods* (Trends in Linguistics: Studies and Monographs 68), 163–215. Berlin & New York: Walter de Gruyter.

Maguire, Warren. 2017. Epenthesis in liquid + consonant clusters in Scots. In Janet Cruickshank & Robert McColl Millar (eds.), *Before the storm: Papers from the Forum for Research on the Languages of Scotland and Ulster triennial meeting, Ayr 2015*, 156–183. Aberdeen: University of Aberdeen.

Maguire, Warren. 2018. The origins of epenthesis in liquid + sonorant clusters in Mid-Ulster English. *Transactions of the Philological Society*. Forthcoming.

Michels, Victor. 1979. *Mittelhochdeutsche Grammatik*. Hugo Stopp (ed.). Heidelberg: Carl Winter Universitätsverlag.

Ní Chiosáin, Máire. 1999. Syllables and phonotactics in Irish. In Harry van der Hulst & Nancy Ritter (eds.), *The syllable: Views and facts* (Studies in Generative Grammar 45), 551–575. Berlin: Mouton de Gruyter.

Noreen, Adolf. 1904. *Altnordische Grammatik*. Vol. 2: *Altschwedische Grammatik*. Mit Einschluss des Altgutnischen. Halle: Max Niemeyer.

Noreen, Adolf. 1923. *Altnordische Grammatik*. Vol. 1: *Altisländische und altnorwegische Grammatik*. 4th edn. Halle (Saale): Verlag von Max Niemeyer.

Ó Baoill, Dónall P. 1980. Preaspiration, epenthesis and vowel lengthening: Interrelated and of similar origin? *Celtica* 13. 79–108.

Ó Baoill, Dónall P. 1997. The emerging Irish phonological substratum in Irish English. In Jeffrey Kallen (ed.), *Focus on Ireland* (Varieties of English Around the World 21), 73–87. Amsterdam: John Benjamins.

Ó hÚrdail, Roibeárd. 1997. Confusion of dentality and alveolarity in dialects of Hiberno-English. In Jeffrey Kallen (ed.), *Focus on Ireland* (Varieties of English Around the World 21), 133–152. Amsterdam: John Benjamins.

Ó Siadhail, Mícheál. 1989. *Modern Irish: Grammatical structure and dialectal variation*. Cambridge: Cambridge University Press.

Operstein, Natalie. 2010. *Consonant structure and prevocalization* (Current Issues in Linguistic Theory 312). Amsterdam: John Benjamins.

Orton, Harold & Eugen Dieth. 1962–1971. *Survey of English dialects: The basic material*. Leeds: Arnold & Son.

Petterssen, Egil. 1975. *Språkbrytning i Vest-Norge 1450–1550: Språket i vestnorske skrifter ved overgangen fra mellomalder til nyere tid*. Bergen, Oslo & Tromsø: Universitetsforlaget.

Pilch, Herbert. 1990. Hiberno-English: Empirical model of a phonemic substratum. *Celtica* 21. 576–587.

Reutercrona, Hans. 1920. *Svarabhakti und Erleichterungsvokal im Altdeutschen bis ca. 1250*. Heidelberg: Carl Winter Universitätsverlag.

Ringe, Don & Ann Taylor. 2014. *The development of Old English* (A linguistic history of English 2). Oxford: Oxford University Press.

Rydland, Kurt. 1998. *The Orton corpus: A dictionary of Northumbrian pronunciation, 1928–1939*. Oslo: Novus press.

Schirmunski, Viktor M. 1962. *Deutsche Mundartkunde: Vergleichende Laut- und Formenlehre der deutschen Mundarten*. Berlin: Akademie Verlag.

Schmidt, Johannes. 1871. *Zur Geschichte des indogermanischen Vokalismus*. Weimar: Hermann Böhlau.

Schumacher, Stefan. 2011. Mittel- und Frühneukymrisch. In Elmar Ternes (ed.), *Brythonic Celtic – Britannisches Keltisch: From Medieval British to Modern Breton* (Münchner Forschungen zur historischen Sprachwissenschaft 11), 85–236. Bremen: Hempen Verlag.

Seip, Didrik Arup. 1934. *Studier i norsk språkhistorie*. Oslo: H. Aschehoug & Co.

Shuken, Cynthia R. 1984. Highland and Island English. In Peter Trudgill (ed.), *Language in the British Isles*, 152–166. Cambridge: Cambridge University Press.

Simon Evans, D. 1964. *A grammar of Middle Welsh*. Dublin: Dublin Institute for Advanced Studies.

Smith, Norval. 1999. A preliminary account of some aspects of Leurbost Gaelic syllable structure. In Harry van der Hulst & Nancy Ritter (eds.), *The syllable: Views and facts* (Studies in Generative Grammar 45), 577–630. Berlin: Mouton de Gruyter.

Steller, Walther. 1928. *Abriss der altfriesischen Grammatik: Mit Berücksichtigung der westgermanischen Dialecte des Altenglischen, Altsächsischen und Althochdeutschen*. Halle (Saale): Max Niemeyer Verlag.

Thomason, Sarah G. 2010. Contact explanations in linguistics. In Raymond Hickey (ed.), *The handbook of language contact*, 31–47. Oxford: Blackwell.

Van Bree, Cor. 1987. *Historische grammatica van het Nederlands*. Dordrecht: Foris.

Van Loey, Adolphe. 1976. *Middelnederlandse spraakkunst*. Vol. 2: *Klankleer*. Groningen: H. D. Tjeenk Willink.

Visser, Willem. 2017. *Schwa insertions in word-final sequences*. Taalportaal. http://taalportaal.org/taalportaal/topic/pid/topic-14020545873293817 (13 December, 2017).

Warner, Natasha, Allard Jongman, Anne Cutler & Doris Mücke. 2001. The phonological status of Dutch epenthetic schwa. *Phonology* 18(3). 387–420.

Wentworth, Roy Graham. 2005. *Rannsachadh air fòn-eòlas dualchainnt Ghàidhlig Gheàrrloch, Siorrachd Rois*. Dublin: Dublin Institute for Advanced Studies. http://www.celt.dias.ie/publications/online/gearrloch/.

Wessén, Elias. 1958. *Svensk språkhistoria*. Vol. 1: *Ljudlära och ordböjningslära*. 5th edn. Stockholm: Almqvist & Wiksell.