



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

## Preaspiration and tonal accents as Northern Gaelic features

**Citation for published version:**

Iosad, P 2015, 'Preaspiration and tonal accents as Northern Gaelic features: Reconsidering contact origins' Paper presented at 15th International Congress of Celtic Studies, Glasgow, United Kingdom, 13/07/15 - 17/07/15, .

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Peer reviewed version

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



# Preaspiration and tonal accents as Northern Gaelic features

Or: Reconsidering contact origins

Pavel Iosad  
Oilthigh Dhùn Èideann  
pavel.iosad@ed.ac.uk

15mh Còmhhdail Eadar-Nàiseanta na Ceiltis

Oilthigh Ghlaschu  
16 an t-Iuchar 2015

## Preview of argument

- Preaspiration and tonal accents in Scotland and Ulster show the classic pattern of innovating centre vs archaic periphery
- This presupposes that the ‘archaic’ pattern was once spread throughout the entire area
- ☞ An early form of both phenomena must have been present in the entire Northern Gaelic area
  - No special status for areas of heavy Norse settlement
  - Reasonable internal reconstruction
- No *need* for recourse to contact

## 1 Reconstruction

### 1.1 Preaspiration

#### Preaspiration in the Gaelic languages

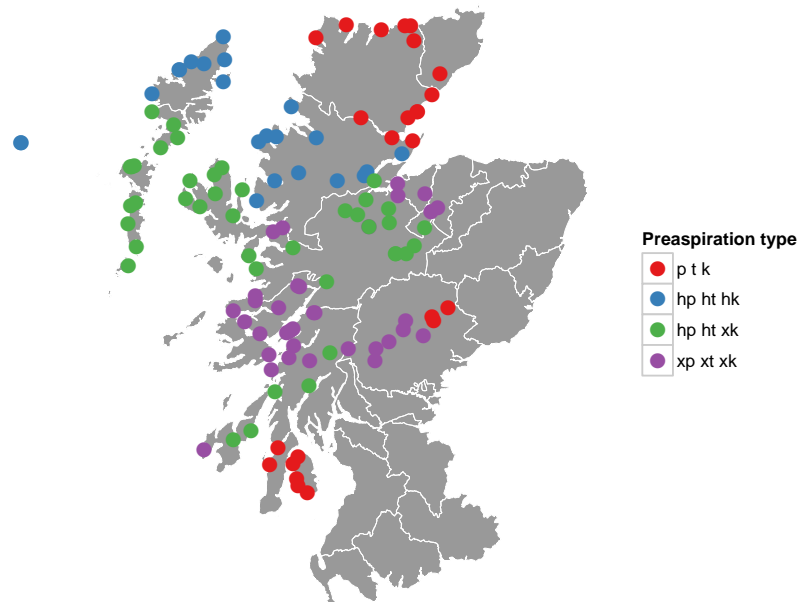
For discussion, see Ó Murchú (1985), Ní Chasaide & Ó Dochartaigh (1984), Ní Chasaide (1986), Bosch (2006), Ó Maolalaigh (2010), Clayton (2010)

- o. No preaspiration: most of Ireland, eastern and southern periphery in Scotland
1. /<sup>h</sup>p <sup>ht</sup> <sup>hk</sup>/: Lewis, NW Scottish mainland, (*West Ulster*) (Ní Chasaide & Ó Dochartaigh 1984, Ní Chasaide 1986)
2. /hp ht xk/: Western Isles south of Lewis, Skye, Inner Hebrides, parts of Ross-shire
3. /xp xt xk/: Lorn, Lochaber, central mainland as far east as Banffshire on place-name evidence (Grant 2002)

## Reconstruction

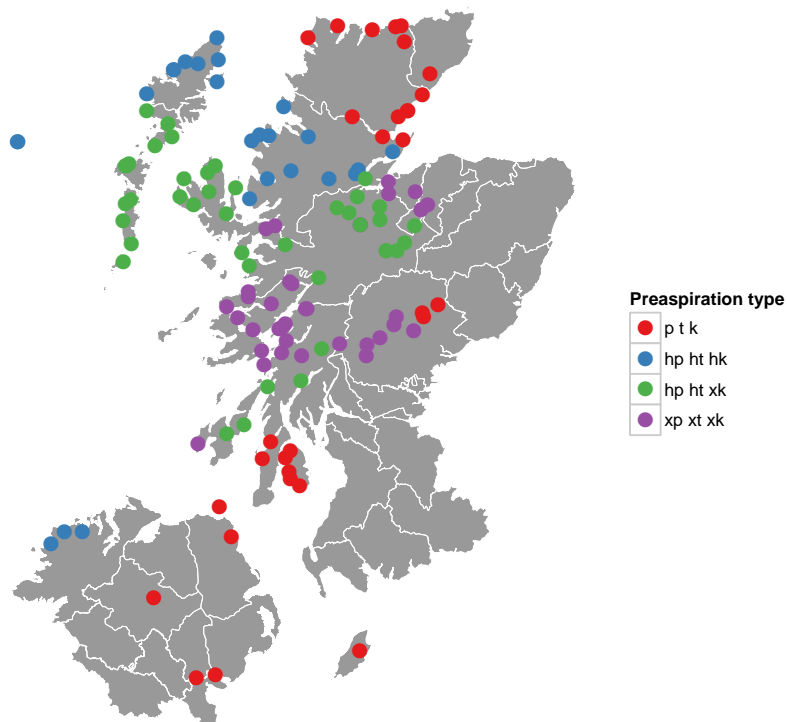
- Weak preaspiration (the ‘Lewis’ type) is the most archaic
  - Typological arguments (Ní Chasaide 1986, Silverman 2003, Clayton 2010)
  - Interaction between preaspiration and *\*xt* → *xk*: lack of *boc*—*bochd* merger in Lewis implies lack of *xk* → *hk* sound change (provided the chronological assumptions hold)
- /hk/ becomes /xk/ for functional reasons: preaspiration is longest before [k] (Ní Chasaide 1986, Clayton 2010)
- Generalization of *\*h* → *x* before a stop

## The Scottish perspective



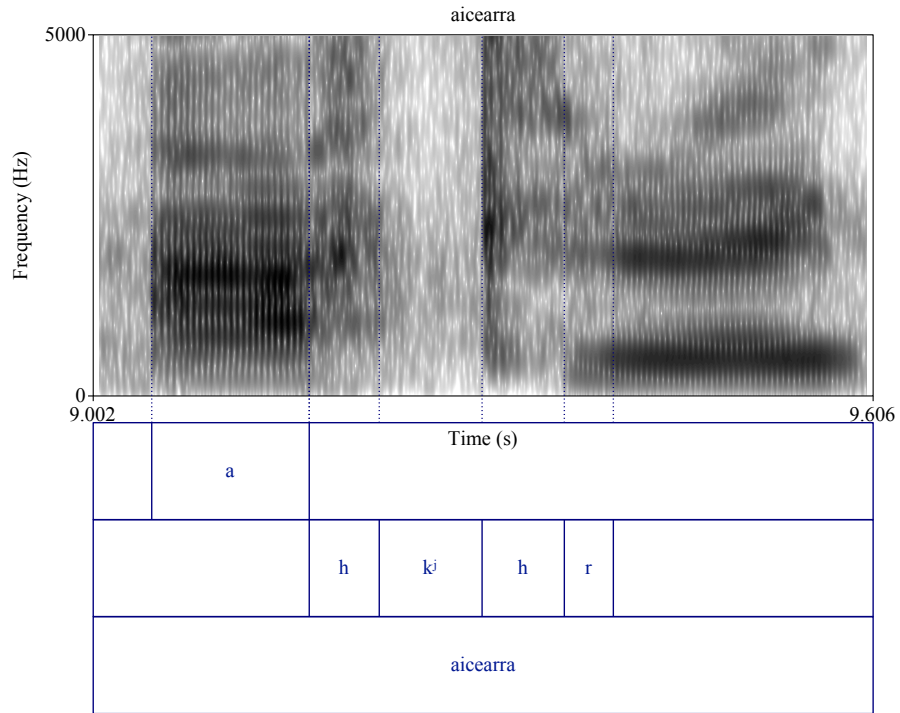
- Focusing just on Scotland, the spatial pattern is not immediately clear:
  - /hp ht hk/ is ‘peripheral’ on the islands, but intrudes far into the mainland
  - Both /hp ht xk/ and /hp ht hk/ are ‘central’ in some sense
- Several conceivable interpretations
- In particular, it is possible to see preaspiration spreading from the Western Isles to the east and south

## The Northern Gaelic perspective

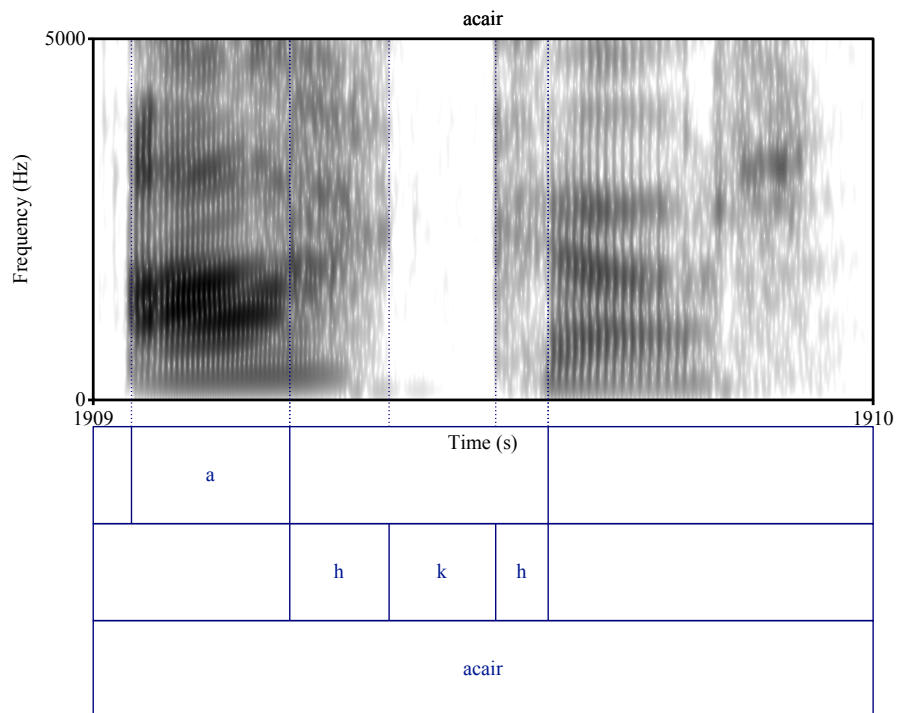


- In a pan-Gaelic perspective, /<sup>h</sup>p <sup>h</sup>t <sup>h</sup>k/ is clearly a *peripheral* pattern
- Preaspiration in Irish
  - Securely attested in Gaoth Dobhair (Ní Chasaide & Ó Dochartaigh 1984, Ní Chasaide 1986)
  - Possibly hiding behind some of the descriptions of ‘fortis’/‘lenis’ contrast, e.g. Teileann (Wagner 1959)?
- Perhaps less obligatory than in Scotland
- Crucially: Lewis and Irish preaspiration are of the same type and *unlike* that in /hp ht xk/ dialects (Ní Chasaide 1986)
- /<sup>h</sup>p<sup>h</sup> <sup>h</sup>t<sup>h</sup> <sup>h</sup>k<sup>h</sup>/ vs /hp ht xk/

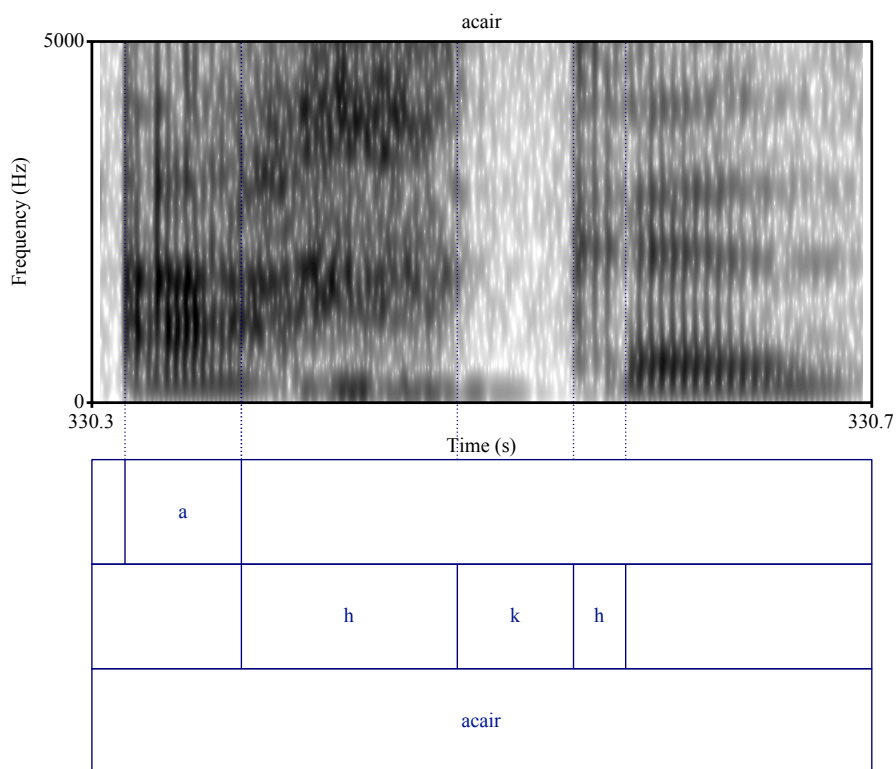
## Ulster Irish



**Lewis Gaelic**



### North Uist Gaelic



### Mapping the interpretation

- Two possible interpretations:
  - Lewis and West Ulster show the same archaic feature
  - The developments in Lewis and West Ulster are independent but not far advanced
  - ☞ Corollary: this kind of preaspiration is relatively easy to get
  - ☞ Exactly this kind of preaspiration is attested in Welsh
- In either case: more advanced preaspiration systems should have gone through this stage!

### Discussion

- This map ignores potential *loss* of preaspiration in peripheral areas (cf. /p t xk/ system in SE Argyll)
- Even so: *some* form of preaspiration must have been current in *most* of the Northern Gaelic area
- ☞ For discussion of Northern Gaelic, see Ó Maolalaigh (1997), Ó Buachalla (2002), Ó Muircheartaigh (2014)
- The initial spread of preaspiration does *not* show a strong affinity with areas of extensive Norse settlement
- Interesting: persistence of archaic preaspiration, contra Silverman (2003)

## 1.2 Tone accents

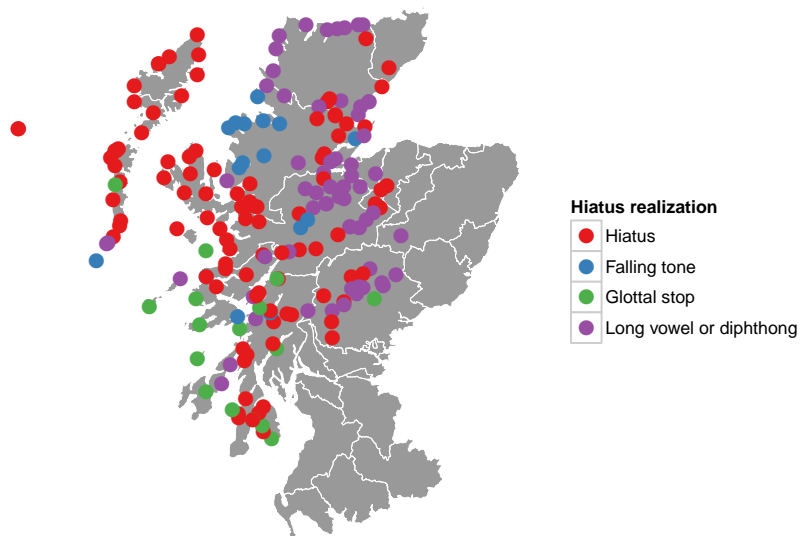
### Tonal accents in Gaelic

- See Borgstrøm (1974), Ternes (1980, 2006), MacAulay (1993), Brown (2009), Nance (2015)
- Lewis ‘accent 1’: early rise + fall
- Lewis ‘accent 2’: late rise, no fall
- Accent 1: historical disyllables
  - Hiatus words: *adha*
  - Plain disyllables: *balach*
- Accent 2: historical monosyllables
  - Plain monosyllables: *àth*
  - Svarabhakti words: *balg*
- Alternations: Lewis *leabhar* [<sup>1</sup>l̥ɑ:r] vs *leabhraichean* [<sup>2</sup>l̥ɑ:riçən]

### Diversity of realization

- Lewis: tonal accent as described (Ofstedal 1956)
- Acoustic study of Ness by Brown (2009): L\* towards the end of stressed syllable, followed by intonational H (cf. Ladefoged et al. 1998, Ladefoged 2003)
- Applecross (Ternes 2006): additional falling onglide in accent 2, otherwise like Lewis (in isolation)
- SGDS transcriptions of hiatus (Ó Dochartaigh 1994–1997, vol. 1, §7.6.5)
  - /ʔ/: glottal stop (see also Holmer 1938)
  - //: ‘salient hiatus’
  - /-/: ‘hiatus with no glottal catch’ (pitch? intensity?)
  - Two symbols that mostly represent falling tone

Sample map: SGDS 474 *giuthas*



### Pitch and glottalization

- Glottalization can be reasonably connected with falling tone
- ☞ See Riad (2000), Hognestad (2007) for North Germanic, Kiparsky (forthcoming) for Finno-Ugric
- Falling tone across a syllable boundary presupposes a high tone towards the end of the first syllable
- But the high tone in Lewis is on the post-tonic syllable: why?

### Pitch in Ulster Irish

- Dalton & Ní Chasaide (2005)
  - Gaoth Dobhair nuclear accent is  $L^*+H$ , H aligned at the right edge of phrase
  - Cois Fharraige: nuclear accent is  $H^*+L$ , left alignment of H
- The Ulster nuclear accent is (again) similar to the Lewis  $L^*+H$ , except for the alignment of the trailing tone
- Ulster and Scotland show later peaks compared to Connacht and Munster
- Rising nuclear accents: typologically highly unusual (Köhnlein 2013)



### Peak delay

- Rightward drift of H tone: *peak delay* (Ladd 2008)
- Connacht/Munster H\*+L is the original system
- Northern Gaelic shows various stages of peak delay
  1. Lewis: trailing H on next syllable
  2. West Ulster: trailing H on right boundary
  3. Falls/creaks: right-drifting H runs into L

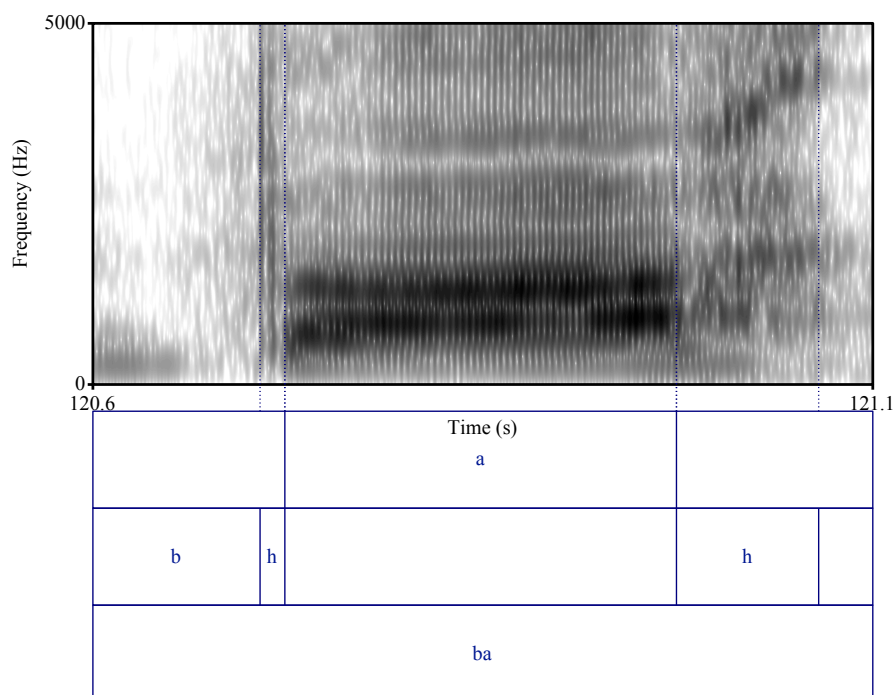
### Glottalization and stress-to-weight

- South Argyll: glottalization in all main-stressed light syllables: *teth*, *radan*
- But not *tapaidh* [ˈtʰahpi], *beò* [ˈpjoː]
  - Islay (Holmer 1938)
  - (South) Jura (G. Jones 2000, 2006, 2010)
  - Colonsay (Scouller 2015)
- Stress-to-weight (Smith 1999) generalized to all stressed syllables
- No glottalization when second mora present from another source
  - Consonant cluster
  - Preaspiration
  - Long vowel or diphthong

### Stress-to-weight elsewhere

- Ó Maolalaigh (2014) rounds up the evidence
  - ‘*Gestoßene Silbe*’ in Ulster Irish monosyllables, especially Tyrone (Stockman & Wagner 1965, Hughes 1994)
  - [h]-epenthesis in light monosyllables all across Ulster
- Glottalization and/or aspiration of sonorants: *fear* [fɑːʔ], *darna* [dɑʔRnə] (G. Jones 2010) vs [darhnə] (Holmer 1938)
- ☞ This is more similar to the *stød* of Danish
- ☞ Although Danish also has varieties with *stød* on short vowels (Ringgaard 1960, Ejskjær 1967)
- Consonants are commonly described as ‘fortis’ after short vowels in Ulster: might this be glottalization?
- Connection between glottalization and sonorant pre-stopping in Manx? Both after short vowels
- In Northern Sámi, some dialects have sonorant prestopping (Sammallahti 1998) corresponding to preglottalization in others (Bals Baal, Odden & Rice 2012)

## Gaoth Dobhair *ba*



- Epenthetic [h] is more difficult to connect to tone typologically
- Possible solution: S. Watson (1996), though see Ó Maolalaigh (2010)
- However, /h/-epenthesis in light syllables is unmotivated unless the stress-to-weight has already been established
- Stress-to-weight arises from tonal developments?

### Summary on glottalization

- Tones and glottalization all go back to peak delay
- Peak delay is a Northern Gaelic feature
- South Argyll, (East?) Ulster and Man: potentially most innovative area
- Lewis tone is *archaic*
- Peak delay is typologically *not* unusual
- ☞ Recurrent process in North Germanic (Bye 2004, Hognestad 2012)

## 2 Discussion

### 2.1 Preaspiration: why Norse?

#### Norse and Gaelic preaspiration

- Is the Gaelic stop system particularly similar to Norse anyway?
- Yes: Marstrander (1932), Oftedal (1947), Borgstrøm (1974)
- Special feature of the Gaelic stop system: contrast between (pre/post)aspirated and fully voiceless unaspirated (Ó Murchú 1985)
- This system in North Germanic: Icelandic, potentially SW Norway
- Preaspiration in North Germanic found in *other* systems (Pétur Helgason 2002, Pétur Helgason & Ringen 2008, Ringen & van Dommelen 2013)
- Icelandic preaspiration is *unusual* in a North Germanic context (Pétur Helgason 2002)
- Icelandic preaspiration is similar to *some*, but not *all* types of Gaelic preaspiration (Ní Chasaide 1986)

### The internal scenario

- Preaspiration is commonly found at least as an option in systems with postaspiration in stressed onsets
- ☞ English is relatively unusual: widespread foot-internal lenition (Honeybone 2012, Harris 2012), preaspiration attested even in non-contact contexts (Docherty & Foulkes 1999, M. J. Jones & Llamas 2003, K. Watson 2007, Gordeeva & Scobbie 2010, Hejné & Scanlon 2015)
- Northern Gaelic innovation: ‘non-normative’ preaspiration *across the entire area* (now West Ulster, Lewis) ⇒ ‘normative’ preaspiration (now Uist, North Argyll...)
- Parallel development in North Germanic: preaspiration is ‘normative’ in Iceland and bits of Norway (?) but mostly not

### Summary on preaspiration

- Old point 1: preaspiration *can* be an internal innovation (Ó Baoill 1980, Ní Chasaide 1986, Ó Murchú 1985, Ó Maolalaigh 2010)
- New point 1: preaspiration *must* have been Northern Gaelic in extent (adumbrated by Ó Maolalaigh 2010)
- ☞ No specific relationship to areas of Norse settlement
- Old point 2: Gaelic preaspiration isn’t a unified phenomenon, and only partially similar to Norse (Ní Chasaide 1986)
- New point 2: little evidence that Norse preaspiration *can* have been a source for Gaelic, let alone that it must have

## 2.2 Tone accents: why Norse?

### Why Norse?

- Typologically unusual: happy to talk about this (Iosad 2015)
- Borgstrøm (1974): Gaelic rising pitch is similar to Western Norwegian accents
- No wonder! Western Norwegian accent 2 has a later peak than accent 1 by peak delay (Hognestad 2012)
- Typologically almost trivial

### Peak delay: a Northern Gaelic feature

- By the same reasoning: various kinds of delayed peaks are common across the Northern Gaelic area
- ☞ Much more instrumental work needed to understand the hiatus realization (Brown 2009)
- ☞ However, peak delay must have covered areas like Ulster and all of Argyll, not generally associated with strong Norse influence
- The case is slightly less secure for lack of reliable data, but similar reasoning to above

### 2.3 The case for contact?

- Contact is impossible to deny in view of placename and lexical evidence
- Multiple causation of language change is *not* unusual (Thomason 2000, 2010)
- The early stages of the Gaelic innovations may have arisen at about the same time as the *early* stages of the relevant innovations in Norse
- ☞ This is contentious at least for tone (Riad 1998, 2003, 2005)
- ☞ No good understanding of the diachrony for preaspiration yet
- Some sort of (mutually?) reinforcing development is difficult to rule out at this stage — and probably undesirable?

### Summary

- Both preaspiration and tonal accents are pan-Northern Gaelic innovations
- Their distribution shows little cohesion with areas of strong Norse influence
- Similarities between relevant phenomena in North Germanic and Gaelic are explainable by typologically common processes
- Contact influence is difficult to exclude, but neither are the arguments for it particularly compelling

## References

- Bals Baal, Berit Anne, David Odden & Curt Rice. 2012. An analysis of North Saami gradation. *Phonology* 29 (2). 165–212.
- Borgstrøm, Carl Hjalmar. 1974. On the influence of Norse on Scottish Gaelic. *Lochlann* 6. 91–107.
- Bosch, Anna R. K. 2006. Revisiting preaspiration: Evidence from the Survey of the Gaelic Dialects of Scotland. *Proceedings of the Harvard Celtic Colloquium* 26/27. 269–290.
- Brown, Morag. 2009. *An investigation into prosodic patterns in the Ness dialect of Scottish Gaelic*. Edinburgh: University of Edinburgh MA (Hons) dissertation.
- Bye, Patrik. 2004. Evolutionary typology and Scandinavian pitch accent. MS., University of Tromsø.
- Clayton, Ian. 2010. *On the natural history of preaspirated stops*. Chapel Hill: University of North Carolina at Chapel Hill PhD thesis.
- Dalton, Martha & Ailbhe Ní Chasaide. 2005. Tonal alignment in Irish dialects. *Language and Speech* 48(4). 441–464.
- Docherty, Gerard J. & Paul Foulkes. 1999. Derby and Newcastle: Instrumental phonetics and variationist studies. In Paul Foulkes & Gerard J. Docherty (eds.), *Urban voices*, 47–71. London: Arnold.

- Ejskjær, Inger. 1967. *Kortvokalstødet i sjællandsk* (Udvalg for folkemaals publikationer. Serie A 22). København: Akademisk forlag.
- Gordeeva, Olga B. & James M. Scobbie. 2010. Preaspiration as a correlate of word-final voice in Scottish English fricatives. In Susanne Fuchs, Martine Toda & Marzena Żygis (eds.), *Turbulent sounds: Interdisciplinary guide* (Interface Explorations 21), 167–208. Berlin: Mouton de Gruyter.
- Grant, Seumas. 2002. Gaelic in Western Banffshire: The extent of Gaelic speech in 1881 and the nature of the Gaelic dialect spoken. In Nancy R. McGuire & Colm Ó Baoill (eds.), *Rannsachadh na Gàidhlig 2000: Papers read at the conference Scottish Gaelic Studies 2000 held at the University of Aberdeen, 2–4 August 2000*, 75–90. Obar Dheathain: An Clò Gaidhealach.
- Harris, John. 2012. Wide-domain *r*-effects in English. *Journal of Linguistics* 49(2). 329–365.
- Hejná, Michaela & Jane Scanlon. 2015. Pre-aspiration and glottalisation in English. Presentation at the 23rd Manchester Phonology Meeting, University of Manchester.
- Hognestad, Jan K. 2007. Tonelag i Flekkefjord bymål. *Norsk lingvistisk tidsskrift* 25(1). 57–88.
- Hognestad, Jan K. 2012. *Tonelagsvariasjon i norsk*. Kristiansand: University of Agder PhD thesis.
- Holmer, Nils M. 1938. *Studies on Argyllshire Gaelic* (Skrifter utgivna av Kungliga Humanistiska Vetenskaps-samfundet i Uppsala 31). Uppsala: Almqvist & Wiksell.
- Honeybone, Patrick. 2012. Lenition in English. In Terttu Nevalainen & Elizabeth Closs Traugott (eds.), *Handbook on the history of English: Rethinking approaches to the history of English*, 773–787. Oxford: Oxford University Press.
- Hughes, Art J. 1994. A phonetic glossary of Tyrone Irish. *Zeitschrift für celtische Philologie* 36. 119–163.
- Iosad, Pavel. 2015. An echoing tone: Pitch accent parallels in Scandinavia and Scotland. Presentation at the Nordic Research Network conference, University of Edinburgh. <https://anhyflawn.github.io/presentation/2015/an-echoing-tone-pitch-accent-parallels-in-scandinavia-and-scotland/>.
- Jones, George. 2000. Beagan mu'n stad ghlotasach ann an Gàidhlig Ceann a Deas Earraghaidheil. *Scottish Gaelic Studies* 20. 201–211.
- Jones, George. 2006. Cunntas air an stad ghlotasach ann an Gàidhlig Ceann a Deas Earra Ghàidheal. In Wilson McLeod, James E. Fraser & Anja Gunderloch (eds.), *Cànan & Cultar / Language & Culture: Rannsachadh na Gàidhlig* 3, 193–202. Edinburgh: Dunedin Academic Press.
- Jones, George. 2010. *The Gaelic of Jura: A description*. Aberystwyth: Aberystwyth University PhD thesis.
- Jones, Mark J. & Carmen Llamas. 2003. Fricated pre-aspirated /t/ in Middlesbrough English: an acoustic study. In Maria-Josep Solé, Daniel Recasens & Joaquin Romero (eds.), *Proceedings of the 15th International Congress of Phonetic Sciences*, 655–658. Barcelona: Universitat Autònoma de Barcelona.
- Kiparsky, Paul. Forthcoming. Livonian stød. In Wolfgang Kehrein, Björn Köhnlein, Paul Boersma & Marc van Oostendorp (eds.), *Segmental structure and tone*. Berlin: Mouton.
- Köhnlein, Björn. 2013. Optimizing the relation between tone and prominence: Evidence from Franconian, Scandinavian, and Serbo-Croatian tone accent systems. *Lingua* 131. 1–28.
- Ladd, D. Robert. 2008. *Intonational phonology*. Cambridge: Cambridge University Press.
- Ladefoged, Peter. 2003. Commentary: some thoughts on syllables — an old-fashioned interlude. In John Local, Richard Ogden & Rosalind A. M. Temple (eds.), *Papers in laboratory phonology VI*, 269–276. Cambridge: Cambridge University Press.
- Ladefoged, Peter, Jenny Ladefoged, Alice Turk, Kevin Hind & St. John Skilton. 1998. Phonetic structures of Scottish Gaelic. *Journal of the International Phonetic Association* 28(1). 1–41.
- MacAulay, Donald. 1993. The Scottish Gaelic language. In Donald Macaulay (ed.), *The Celtic languages* (Cambridge Language Surveys), 137–248. Cambridge: Cambridge University Press.
- Marstrand, Carl. 1932. Okklusiver og substrater. *Norsk tidsskrift for sprogvidenskap* 5. 258–304.

- Nance, Claire. 2015. Intonational variation and change in Scottish Gaelic. *Lingua* 160. 1–19.
- Ní Chasaide, Ailbhe. 1986. *Preaspiration in phonological stop contrasts: An instrumental phonetic study*. Bangor: University College of North Wales PhD thesis.
- Ní Chasaide, Ailbhe & Cathair Ó Dochartaigh. 1984. Some durational aspects of preaspiration. In Jo-Ann Higgs & Robin Thelwall (eds.), *Topics in linguistic phonetics: in honour of E. T. Uldall* (Occasional Papers in Linguistics and Language Learning 9), 141–157. Coleraine: The New University of Ulster.
- Ó Baoill, Dónall P. 1980. Preaspiration, epenthesis and vowel lengthening: interrelated and of similar origin? *Celtica* 13. 79–108.
- Ó Buachalla, Breandán. 2002. Common Gaelic revisited. In Nancy R. McGuire & Colm Ó Baoill (eds.), *Rannsachadh na Gàidhlig 2000: Papers read at the conference Scottish Gaelic Studies 2000 held at the University of Aberdeen, 2–4 August 2000*, 1–12. Obar Dheathain: An Clò Gaidhealach.
- Ó Dochartaigh, Cathair (ed.). 1994–1997. *Survey of the Gaelic dialects of Scotland*. Dublin: Dublin Institute for Advanced Studies.
- Ó Maolalaigh, Roibeard. 1997. *The historical short vowel phonology of Gaelic*. Edinburgh: The University of Edinburgh PhD dissertation.
- Ó Maolalaigh, Roibeard. 2010. The sound of silence: Some structural observations on preaspiration in Scottish Gaelic. In Wilson McLeod, Abigail Burnyeat, Domhnall Uilleam Stiùbhart, Thomas Owen Clancy & Roibeard Ó Maolalaigh (eds.), *Bile ós chrannaibh: A Festschrift for William Gillies*, 365–404. Ceann Drochaid: Clann Tuirc.
- Ó Maolalaigh, Roibeard. 2014. Glottal and related features in the Gaelic languages. Presentation at the 8th Celtic Linguistics Conference, University of Edinburgh.
- Ó Muircheartaigh, Peadar. 2014. *Gaelic dialects present and past: A study of modern and medieval dialect relationships in the Gaelic languages*. Edinburgh: The University of Edinburgh PhD dissertation.
- Ó Murchú, Máirtín. 1985. Varia VIII. Devoicing and pre-aspiration in varieties of Scots Gaelic. *Ériu* 36. 195–198.
- Oftedal, Magne. 1947. Jærskje okklusivar. *Norsk tidsskrift for sprogvidenskap* 14. 229–235.
- Oftedal, Magne. 1956. *The Gaelic of Leurbost, Isle of Lewis* (A linguistic survey of the Gaelic dialects of Scotland 3). Oslo: W. Aschehoug & Co.
- Pétur Helgason. 2002. *Preaspiration in the Nordic languages*. Stockholm: Stockholm University PhD thesis.
- Pétur Helgason & Catherine Ringen. 2008. Voicing and aspiration in Swedish stops. *Journal of Phonetics* 36(4). 607–628.
- Riad, Tomas. 1998. The origin of Scandinavian tone accent. *Diachronica* 15(1). 63–98.
- Riad, Tomas. 2000. The origin of Danish *stød*. In Aditi Lahiri (ed.), *Analogy, leveling, markedness*, 261–300. Berlin, New York: Mouton de Gruyter.
- Riad, Tomas. 2003. Diachrony of the Scandinavian accent typology. In Paula Fikkert & Haike Jacobs (eds.), *Development in prosodic systems* (Studies in Generative Grammar 58), 91–144. Berlin: Mouton de Gruyter.
- Riad, Tomas. 2005. Historien om tonaccenten. *Studier i svensk språkhistoria* 8. 1–27.
- Ringen, Catherine & Wim A. van Dommelen. 2013. Quantity and laryngeal contrasts in Norwegian. *Journal of Phonetics* 41(6). 479–490.
- Ringgaard, Kristen. 1960. *Vestjysk stød*. Aarhus: Universitetsforlaget.
- Sammallahti, Pekka. 1998. *The Saami languages: an introduction*. Kárášjohka: Davvi girji.
- Scouller, Alastair MacNeill. 2015. Inter-related prosodic features in a dialect of South Argyll. Presentation at Teangeolaíocht na Gaeilge XV, Maynooth University.
- Silverman, Daniel. 2003. On the rarity of pre-aspirated stops. *Journal of Linguistics* 39(3). 575–598.
- 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.

- Stockman, Gerald & Heinrich Wagner. 1965. Contributions towards a study of Tyrone Irish. *Lochlann* 3. 43–236.
- Ternes, Elmar. 1980. Scottish Gaelic phonemics viewed in a typological perspective. *Lingua* 52(1–2). 73–88.
- Ternes, Elmar. 2006. *The phonemic analysis of Scottish Gaelic, based on the dialect of Applecross, Ross-shire*. 3rd revised. Dublin: Dublin Institute for Advanced Studies.
- Thomason, Sarah G. 2000. Linguistic areas and language history. In Dickey Gilbers, John Nerbonne & Jos Schaeken (eds.), *Languages in contact*, 311–327. Amsterdam: Rodopi.
- Thomason, Sarah G. 2010. Contact explanations in linguistics. In Raymond Hickey (ed.), *The handbook of language contact*, 31–47. Oxford: Blackwell.
- Wagner, Heinrich. 1959. *Gaeilge Theilinn: Foghraidheacht, gramadach, téacsanna*. Dublin: Dublin Institute for Advanced Studies.
- Watson, Kevin. 2007. Liverpool English. *Journal of the International Phonetic Association* 37 (3). 351–360.
- Watson, Seosamh. 1996. Hiatus-filling /h/ in Irish and Scottish Gaelic dialects. *Scottish Gaelic Studies* 17. 376–382.