Phonological convergence in north-western Europe

Language contact or drift?

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The argument

Phonological systems in north-western Europe

- Unrelated languages
  - Germanic
  - Celtic
  - Finno-Ugric: Sámi
- Shared features
  - 'Tonal accents' (Jakobson 1929, 1931, Ternes 1980, Koptjevskaja-Tamm 2006)
  - Preaspiration (Wagner 1964, Salmons 1992, Blevins 2017)
  - Sonorant preocclusion *nn > dn (Wagner 1964)
  - Distinctive quantity (Ewels 2009)
  - …others (Eliasson 2000)

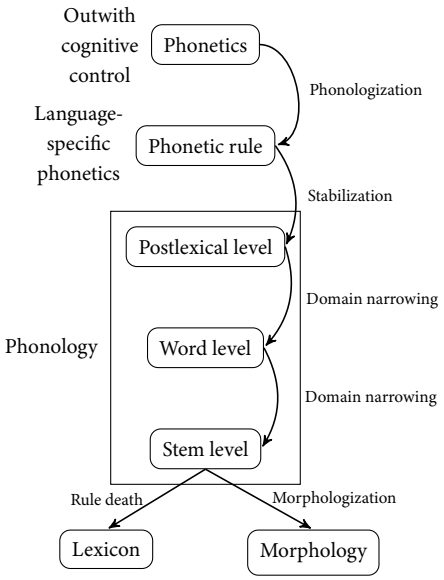
Why?

- Common substrate (Wagner 1964, Kylstra 1967, Mailhammer & Vennemann 2019)
- Bilateral contacts (Salmons 1992, Gunnar Ólafur Hansson 2001, Rießler 2008, Kusmenko 2008)
- Internal development (Ó Baoill 1980, Ní Chasaide 1986, Ó Maolalaigh 2010)
- Coincidence?

Proposal

- Parallel development due to drift (Sapir 1921)
- Joseph (2013): drift is a consequence of variation in the protolanguage
- Shared pathway: variation → categorical phonology
- The life cycle of phonological processes (Kiparsky 1995, Bermúdez-Otero 2007, 2015, Bermúdez-Otero & Trousdale 2012)
- Similar starting point + the life cycle = drift

The life cycle



The life cycle as diagnostic

- The life cycle is generally unidirectional, but can be disrupted by contact (Bermúdez-Otero 2007)
- A reconstruction that follows the life cycle is consistent with endogenous change

Case study

- Preaspiration
  - The Gaelic languages (Iosad 2020)
  - North Germanic (Iosad 2019)

Preaspiration: North Germanic

Quick historiography

- Rare and unusual, largely confined to archaic/peripheral dialects
  - Icelandic and Faroese (Sweet (1877) and every single description since)
  - North Gudbrandsdalen Norwegian (Bjørset 1899, Ross 1907, Storm 1908)
  - Åland Swedish (Hesselman 1905)
- Maybe not so rare
  - Rogaland Norwegian (Oftedal 1947, Wolter 1965, Annear 2012, Tengesdal 2015)
  - Trøndelag Norwegian (van Dommelen 2000, Ringen & van Dommelen 2013)

  - Central Standard Swedish (Pétur Helgason 2002)
- Actually all over the place (Pétur Helgason 2002, Payne et al. 2017, Iosad 2019)

  [T]he tendency to preaspirate, although it is not normative, permeates Scandinavian stop production.

The age of preaspiration

- Medieval development (Zachariasen 1968, Goblirsch 2001)
- At least as old as the Viking Age (Marstrander 1932)
- Common Nordic (Page 1997, Gunnar Ólafur Hansson 2001, Pétur Helgason 2002)
- Proto-Germanic, as stød (Liberman 1984, Kortlandt 1988)

Proposed origins

- Accentual theory (Liberman 1984): accent → stød → preaspiration
- Sámi substrate theory (Rießler 2004, Kusmenko 2008)
- Coarticulation with aspirated stops (Pétur Helgason 2002)

Normative vs. non-normative

- Pétur Helgason (2002): preaspiration can be normative and non-normative
- The criterion is basically sociolinguistic: 'non-normative' = variable, not obligatory
- Gunnar Ólafur Hansson (2001); Pétur Helgason (2002): non-normative preaspiration is so common, it is unlikely it was repeatedly innovated
- Non-normative ⇒ normative over time by *narrowing the range of variation* ('expansion/contraction model')

The life cycle of preaspiration

1. Mechanical coarticulation
2. Phonetic rule ≈ non-normative preaspiration
3. Phonological rule ⇒ domain narrowing

Life cycle criteria

- The crucial distinction for the life cycle is *modularity* (Iosad 2017)
- Phonologization: phonetic rules on a continuous scale
- Stabilization: (possibly stochastic) manipulation of discrete phonological categories
- Domain narrowing: evidence from morphology-phonology interaction

Preaspiration as a phonetic rule: Northern Norwegian

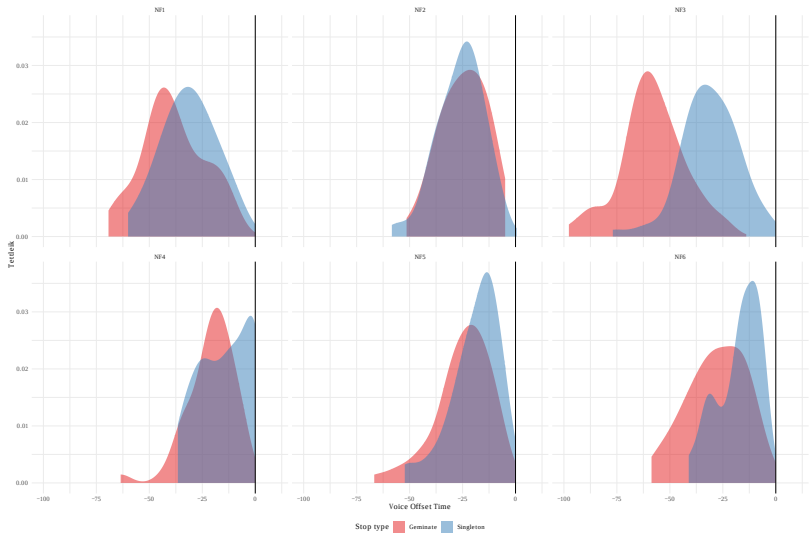


Figure 1: Preaspiration in Northern Norwegian

Preaspiration as a phonological rule: Icelandic

- Basically, |fortis| stops are preaspirated after a short vowel

(1) Distinctive shortness

a.	['kʰahpɪ]	*kapp-i*	'shawl-NOM.SG'
b.	*['kʰapʰːɪ]		
c.	['fahta]	*fatt-a*	'understand-INF'

(2) Coerced shortness

a.	['ɛhplɪ]	*epl-i*	'apple-NOM.SG'
b.	*['ɛpʰlɪ]		
c.	['frɛhkna]	*frekn-a*	'freckle-NOM.SG'

- In Icelandic, preaspiration is a *stem-level* process
- 'Level 1' vs. 'Level 2' processes in Icelandic (Þorsteinn G. Indriðason 1994, Kristján Árnason 2005)

(3)

a.	['sjuːk-ʏr]	*sjúkur*	'ill'
b.	['sjuhk-lɪŋk-ʏr]	*sjúklingur*	'patient'
c.	['sjuːk-lɛɣ-ʏr]	*sjúklegur*	'sickly'

Preaspiration as a stem-level rule: Skaftafellssýslur Icelandic

- Vowels are generally long before C + {ʊ, r, j}

(4)

a.	['nɛːp(ʰ)ja]	*nepj-a*	'bitter cold-NOM.SG'
b.	['ʊœːk(ʰ)ʊa]	*vökv-a*	'water-INF'
c.	['mai̯ːt(ʰ)ra]	*mæt-ra*	'respected-GEN.PL'
d.	['θrɪːsʊar]	*þrisvar*	'thrice'

- Skaftafellsýslur (Eiríkur Rögnvaldsson 1984): vowels are short *but* there is no preaspiration

(5)

a.	['nɛpˑja]	*nepja*	'biting cold'
b.	['ʊɛtˑra]	*vetra*	'to become winter'
c.	['ʊœkˑʊa]	*vökva*	'to water'

- Eiríkur Rögnvaldsson (1984): argument against the analysis by Höskuldur Thráinsson (1978) that preaspiration is a reflex of fortis stop gemination: why not *[nɛhpja] etc.?
- Answer: *opacity*
- Stem-level preaspiration is counterfed by word-level vowel shortening

Preaspiration as a stem-level rule: Suðuroy Faroese

- Faroese: vowels are long before C + [l]
- Faroese *epli* [ɛːplɪ] ≠ Icelandic [ɛhplɪ]
- Suðuroy Faroese (Zachariasen 1968): the vowel is short, but the stop lacks preaspiration

Conclusion on North Germanic

- Gunnar Ólafur Hansson (2001) and Pétur Helgason (2002) are basically correct: variable preaspiration develops into categorical rules
- Phonological criteria (modularity) provide clearer distinctions than sociolinguistic ones (normativity)

Preaspiration: Scottish Gaelic

Quick historiography

> det gelisk som de norske masser i Skottland talte har til alle tider vært et gelisk som har vært sterkt farvet av norsk artikulasjon [...] dette norskstemplede gelisk endte med å erobre hele det gelisktalende Skottland (Marstrander 1932)

> [T]he Norsemen in the North of Scotland transmitted two features of their Norse dialect to Gaelic [...] the features served to *maintain phonemic distinctions in Gaelic*; preaspiration was instrumental in upholding the distinction between tenues and mediae (Borgstrøm 1974)
>
> The theory that preaspiration in Gaelic is due to Norse influence [...] remains the most convincing explanation to date (Gunnar Ólafur Hansson 2001)

- Ó Baoill (1980): preaspiration is an internal development to preserve syllable quantity
- Ní Chasaide (1986): preaspiration is an internal development to maintain *consonant* length

> If one postulates that the devoicing of /b d g/ began in, or near, the region which has now merged the older oppositions, the evolution of modern variants would quite straightforwardly involve the progressive spread from south-east to the north-west [...] of the new phonetics, with the more westerly varieties remaining conservative and reinforcing the older opposition by a compensatory intensification of pre-aspiration (Ó Murchú 1985)
>
> [W]e are not yet at a stage — and it is possible that we will never be — when we can say definitively whether preaspiration in Scottish Gaelic is a thoroughly Norse inheritance, although in some dialects, especially Lewis, it is difficult to deny a Norse connection (Ó Maolalaigh 2010)

The distribution of preaspiration

Dialect geography

- Dialect geography suggests 'peripheral' zones are archaic, 'central' zones are innovative
- If the development is [ʰp ʰt ʰk] > [hp ht hk] > [xp xt xk], then the presumed scenario is (Borgstrøm 1974):
  - Genesis of preaspiration in the north-west
  - Spread towards the south and east
  - Innovation in the central zone

The life cycle: phonetic precursors

- Phonological preaspiration must have developed from a non-controlled occasional mistiming of laryngeal opening relative to stop closure (Hejná 2015)
- Preaspiration in Ulster Irish (Ní Chasaide 1986, Wheatley 2020)
- In view of the Irish evidence, the existence of the phonetic precursor to phonological preaspiration seems assured

The life cycle: phonologization

- Introduction of a language-specific, phonetic rule

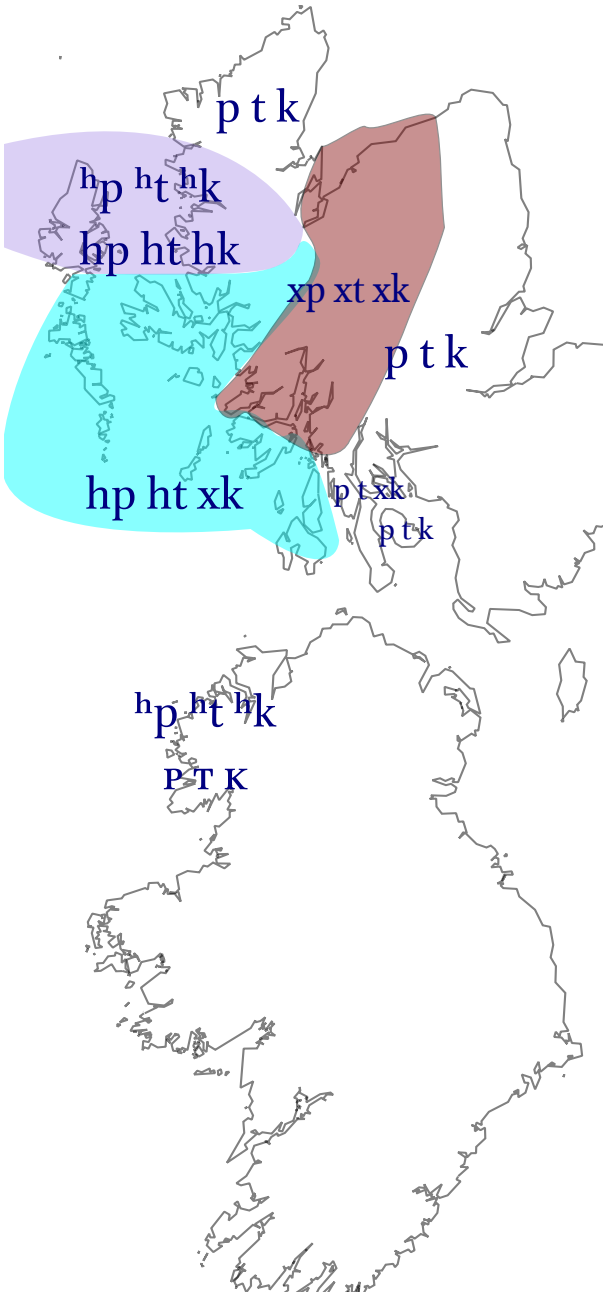


Figure 2: Fortis stops in Scotland and Ireland

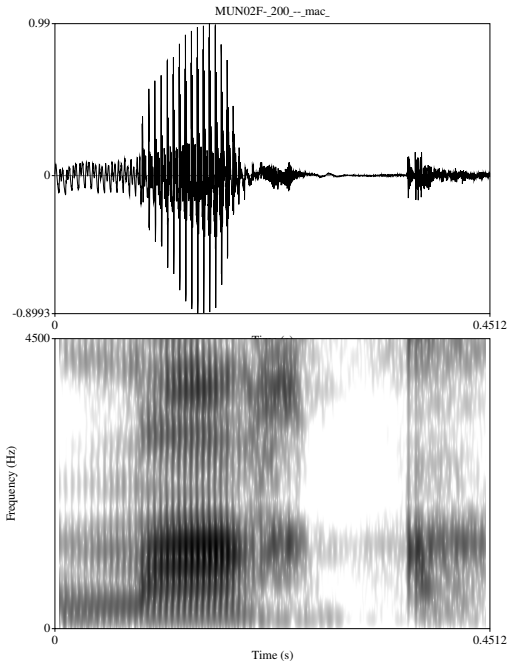


Figure 3: Preaspiration in a Munster Irish speaker: *mac*

- Lewis [ʰp ʰt ʰk] (Ladefoged et al. 1998, Clayton 2010, Nance & Stuart-Smith 2013)
- Likely also Donegal Irish

The life cycle: stabilization

- In some dialects, strong evidence for a *phonological* rule
- South Argyll (Jones 2006, Iosad, Ramsammy & Honeybone 2015, Scouller 2017): preaspiration contributes to syllable weight, because it blocks glottal stop insertion
- *tapaidh* 'clever' [tʰɑ(*ʔ)hpi] and *bailtean* 'towns' [pɑ(*ʔ)lt͡ʃən] vs. *radan* 'quarrel' [Rɑʔtan], *balaich* 'boys' [pɑʔlɪç][1]

[1] Morrison (2019) offers a different interpretation of glottalization, but still compatible with stabilization

Further changes: preaffrication

- Oralizaton in [hk] > [xk] to produce the [hp ht xk] system
- Good phonetic reasons for pre-affrication to target [k] first
- [hk] → [xk] is a synchronic rule: [xk] from /k/ shows distinct alternation behaviour from underlying /xk/
- *muice* 'pig-GEN.SG' [muxʲkʲə] from /mukʲə/ vs. *nas bochda* [pɔxkə][2] 'poorer' from /pɔxk/

[2] Not the expected *boichde* *[pɔxʲkʲə]

Further changes: rule generalization

- Preaffrication: the rule is /h/ → [x] / _[dorsal fortis stop]
- Rule generalization: /h/ → [x] / _[fortis stop]
- This gets us to [xp xt xk]

Further changes: loss

- Clayton (2010): [p t xk] systems are produced by the loss of preaspiration from [hp ht xk] systems

  ::: notes * Possibly in response to a *Vh constraint (Ó Maolalaigh 2010)

The life cycle: lexicalization

- After the end of the life cycle: no productive rule creating [x] before fortis stops
- MacInnes (1992): even where native *tac(an)* is [tʰaxk(an)], English *tack* is [tʰaʰk]
- Rule scattering

Phonetic interference in language contact

- Sources of phonetic interference in contact:
  - L2 speaker agency / shift-induced interference: rapid shift of large numbers of second-language speakers to a socially dominant language
  - L1 speaker agency / convergence under long-term bilingualism
- Neither of these are plausible across the entirety of the 'preaspirating' area

The status of 'central zones'

- Focal area: [xp xt xk] zone in North Argyll and West Perthshire
- Plausible: 'centre of gravity' of Gaelic culture before the fall of the Lordship of the Isles and the retreat towards the NW (MacInnes 1992, Gillies 2009)
- No special affinity to the regions of heavy Norse settlement

Mechanisms of Norse influence: shift-induced interference

- The breakdown of Norse power creates an incentive for Norse speakers to shift to Gaelic
- If 'Norse-accented' Gaelic spread over the entire Gàidhealtachd, we expect
  - High prestige for Norse (Borgstrøm 1974); or
  - Very large numbers of speakers
- If Norse (or Norse-accented Gaelic) had high status, why would speakers shift *from* it?

Mechanisms of Norse influence: bilingual convergence

- Another possibility: preaspiration appeared in the speech of bilinguals due to long-term convergence
- Division between Outer Hebrides and southerly 'hybrid' areas (Jennings & Kruse 2009a, Clancy 2011)
- Evidence for continuity / bilingual society, such as
  - Internal chronology in Gaelic appellative and toponymic lexicon (Oftedal 1962, Cox 2010)
  - Names and naming practices (Gammeltoft 2007)
  - Toponymic evidence (Whyte 2017)
  - Archaeological rethinking (Barrett 2003)
- Increasing recognition that Celtic-Germanic contact in the medieval and early modern period may involve less rapid shift and more prolonged coexistence:
  - Lindqvist (2015) on 'Celticized' West Norse
  - Lewin (2017) on Manx
  - Maguire (2018, 2020) on Ulster English
- The central role of Argyll / Highland Perthshire region is unexplained
- *May* be consistent with large numbers of Norse-Gaelic bilinguals for a long enough time to effect the convergence, but likely only in the Western Isles
- For Argyll, the picture of settlement seems to be quite mixed (Jennings & Kruse 2009b, Whyte 2017), difficult to justify a crucial role for the bilingual population

Conclusion on Gaelic

- Preaspiration in Scottish Gaelic develops from a variable phonetic process found all across Gaelic varieties, probably in both Ireland and Scotland
- The phonological patterning and diatopic variation of preaspiration in Gaelic is entirely explained by the life cycle model of phonological processes
- The development of preaspiration is consistent with a centre of innovation in Argyll and Perthshire, in line with the cultural evidence
- Nothing in the development indicates a necessary, or even a plausible, role for speakers of Norse in the development of preaspiration

Contact or drift?

Parallel developments

- Both North Germanic and Gaelic undergo parallel development
- Both developments follow the life cycle
  - Support for the life cycle
  - Consistent with (but does not prove) endogenous change

The life cycle and variation

- The starting point of the life cycle is variability
- Parallel developments arise because
  - There is similar variability at the earlier stage: |spread glottis| systems (Iverson & Salmons 1995, Eska 2018, 2019, 2020)
  - Path dependency: the life cycle leads the way
  - What gets phonologized?

Preaspiration and moraic quantity

- Preaspiration interacts with moraic quantity
- Germanic: foot-sensitive lenition galore (Holsinger 2000, Köhnlein 2018a,b, Goblirsch 2018, Honeybone 2019)
- Gaelic: less well established, but likely true (Iosad, Ramsammy & Honeybone 2015)
- Preaspiration is an available cue for the postvocalic mora, so it gets co-opted

Where do the similarities come from?

- No need to recourse to contact
- With the life cycle, the model of drift as arising from earlier variation (Joseph 2013, Natvig & Salmons 2020) generalizes to unrelated languages
- Important similarities are
  - Laryngeal phonology: |spread glottis| systems
  - Metrical phonology: moraic trochees
- The latter has been argued to be areal/contact-induced (Salmons 1992)

Further perspectives

- Tonal accents
  - Peak delay (Bye 2004, Hognestad 2012) + moraic trochees
- Sonorant preocclusion
  - Gestural mistiming + moraic quantity (see Lewin (2020) on Manx)

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