Phonological grammar and uncovering past language contacts

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UPLD 2025, Rīga

Claims of this talk

- Current understandings of language contact do not have a sufficiently elaborated interface with phonological grammar
- Closer scrutiny often weakens the case for phonological interference
- Some kinds of contact-induced change in phonology require more theoretical and empirical elaboration

Language contact and phonological change

What is a phonological pattern?

- Phonetic categories
- Phoneme inventories
- Distributions and phonotactics
- Patterns of allophony
- Morphophonological alternations
- Featural representations

Phonologists care about all of these, but how can we use them to understand language contact?

What can be transferred?

In the widely cited distinction between transfer of *matter* and transfer of *pattern*,[1] phonological material sits rather uneasily.

To understand the issue, I adopt a view of phonological architecture that distinguishes between phonological computation (discrete manipulation of proprietary phonological categories) and language-specific phonetics (language-specific interface between the output of phonology and implementation, which uses the real number line).

Division of labour and the life cycle

An observed 'sound pattern' can have multiple ætiologies:[2]

- Universal phonetic pattern, outwith cognitive control
- Language-specific phonetic rule, under cognitive control but outwith phonological computation
- Phonological rule, possibly within a stratal architecture
- Morphological exponent
- Historical remnant

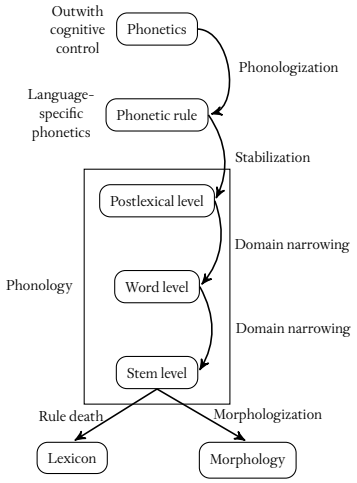

Figure 1: The life cycle of phonological processes

[1] Jeannette Sakel. 2007. Types of loan: matter and pattern. In Yaron Matras & Jeannette Sakel (eds.), *Grammatical borrowing in cross-linguistic perspective*, 15–29. Berlin & New York: Mouton de Gruyter.

[2] Ricardo Bermúdez-Otero. 2015. Amphichronic explanation and the life cycle of phonological processes. In Patrick Honeybone & Joseph C. Salmons (eds.), *The Oxford handbook of historical phonology*, 374–399. Oxford: Oxford University Press; David Natvig. 2019. Levels of representation in phonetic and phonological contact. In Jeroen Darquennes, Joseph C. Salmons & Wim Vandenbussche (eds.), *Language contact: An international handbook*, 88–100. Berlin: De Gruyter.

An example: stop preaspiration

There is a very extensive literature that treats preaspirated stops [ʰp ʰt ʰk] as both rare cross-linguistically[3] and areally concentrated in northern Europe.[4] There is growing evidence that both of these claims needs significant nuance,[5] but it certainly true that this phenomenon is found across genealogical groupings in the northern European region.

A closer look at the patterns shows that 'preaspiration' is far from a unified phenomenon: although the patterns are clearly cognate in terms of the life cycle, we can diagnose them as belonging to different components of the grammar.

[3] Daniel Silverman. 2003. On the rarity of pre-aspirated stops. *Journal of Linguistics* 39(3). 575–598.

[4] Michael Rießler. 2008. Substratsprachen, Sprachbünde und Arealität in Nordeuropa. *North-West European Language Evolution (NOWELE)* 54/55. 99–130.

[5] Michaela Hejná. Forthcoming. On the rarity of pre-aspirated consonants. In Cormac Anderson, Shelece Easterday & Natalia Kuznetsova (eds.), *Rarities in phonetics and phonology: Evolutionary, structural, typological and social dimensions*. Berlin: Language Science Press.

Stage	UR	SR	Phonetics	Example
Phonologization	/p t k/	[p t k]	ʰp ʰt ʰk	Faroese, Ulster Irish, Sea Sámi
Stabilization	/p t k/	[hp ht hk]	hp ht hk	Icelandic, Northern Sámi, Argyll Gaelic
Lexicalization	/hp ht hk/	[hp ht hk]	hp ht hk	South Sámi, Härjedalen Swedish

In what sense can we call 'preaspiration' a contact or areal phenomenon if it's not even a single phenomenon?

Phonological change and agentivity

Contact-induced change in phonology

Where does phonology sit?

- Can phonological patterns transfer? Yes![6]
- How does phonology interact with the two different modes of agentivity?[7]
  - L1 agentivity: yes, although the degree of integration matters. Pieces of phonological 'matter' like phonemes appear to be fairly loosely integrated, and so can transfer quite straightforwardly. Phonological 'patterns' seem to be more abstract, raising questions about how 'easy' they are to borrow.
  - L2 agentivity: yes, sound patterns are generally involved, but social evaluation seems to matter a lot. Essentially, adult learners have a strong 'foreign accent', which can be negatively evaluated but can also be involved in processes such as ethnolectalization.
- What even counts as a phonological pattern?[8]

[6] Sarah G. Thomason & Terrence Kaufman. 1988. *Language contact, creolization, and genetic linguistics*. Berkeley: University of California Press.
Without going into the details here, it is worth remembering that this was not a given in much earlier literature: phonological borrowing was said to be possible only where it sufficiently matched the structure of the recipient language, or led to a decrease in markedness. Although partly a response to 'substrate manias', this turned out to be too strong.

[7] Frans van Coetsem. 1988. *Loan phonology and the two transfer types in language contact*. Dordrecht: Foris; Donald Winford. 2005. Contact-induced changes: Classification and processes. *Diachronica* 22(2). 373–427.

[8] Natvig, 'Levels of representation in phonetic and phonological contact'.

Phonology and language contact in the past

- The sociohistorical circumstances should match the transfer mechanism, but phonology can be involved in both modes

- Phonological change by itself is not easily diagnostic for recovering the type of contact.

Contact-induced change and transfer

As with other abstract, tightly integrated subsystems, not all change in sound patterns that is induced by contact can be conceptualized as *transfer* or *copying*

- Compromise and interlanguage systems[9]
- Loss of marked structures / reversion to the typological mean
- Simultaneous innovation

And conversely, some changes that involve sharing of patterns are not necessarily contact-induced

- Genuine random parallels
- Endogenous developments downstream of contact events[10]
- Drift[11]

The problem with phonology

We don't know *enough* about possible and/or probable phonological changes, but we know *something*, and tend to have strong intuitions[12]

Phonological change and grounding

Phonology is about externalization and subject to extremely strong substantive biases. I would suggest that this is a real difference vis-à-vis morphology and syntax, where biases of various sorts undoubtedly exist, but would seem to be much 'softer'.

This makes distinguishing between 'endogenous' and 'contact-induced' change especially difficult

Types of contact-induced phonological change

Change under L1 agentivity

Convergence under L1 multilingualism?

Perhaps the most straightforward type of contact-induced change in phonology, commonly held responsible for many well-known 'areal sound patterns'

- South Asian retroflexes[13]
- Jewish North-Eastern Neo-Aramaic in contact with Gorani and Kurdish[14]
- Slavic and Baltic in the Great Duchy of Lithuania convergence zone[15]

These cases are especially well known (or at least much cited) where the outcome is total convergence of (sub)systems, but the exact mechanism rarely comes under sustained scrutiny.

A common claim is that unadapted lexical borrowings provide the vector

[9] Margaret Kehoe. 2015. Cross-linguistic interaction: A retrospective and prospective view. In *Proceedings of the International Symposium on Monolingual and Bilingual Speech 2015*, 141–167. Chania: Institute of Monolingual & Bilingual Speech; Samuel Andersson, Oliver Sayeed & Bert Vaux. 2017. The phonology of language contact. *Oxford Handbooks Online*.

[10] Juliette Blevins. 2017. Areal sound patterns: From perceptual magnets to stone soup. In Raymond Hickey (ed.), *The Cambridge handbook of areal linguistics*, 55–87. Cambridge: Cambridge University Press.

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

[12] Martin Kümmel. 2007. *Konsonantenwandel: Bausteine zu einer Typologie des Lautwandels und ihre Konsequenzen für die vergleichende Rekonstruktion*. Wiesbaden: Dr. Ludwig Reichert Verlag; András Cser. 2015. Basic types of phonological change. In Patrick Honeybone & Joseph C. Salmons (eds.), *The Oxford handbook of historical phonology*, 193–204. Oxford: Oxford University Press.

[13] Murray B. Emeneau. 1956. India as a lingustic area. *Language* 32(1). 3–16. http://www.jstor.org/stable/410649.

[14] Geoffrey Khan & Masoud Mohammadirad. 2024. *Language contact in Sanandaj: A study of the impact of Iranian on Neo-Aramaic*. Berlin: Mouton.

[15] Tamara Mikhaĭlovna Sudnik. 1975. *Dialektȳ litovsko-slavyanskogo pogranich'ya: Ocherki fonologicheskikh sistem*. Moscow: Nauka; Aksana Erker & Björn Wiemer. 2011. Manifestations of areal convergence in rural Belarusian spoken in the Baltic-Slavic contact zone. *Journal of Language Contact* 4(2). 184–216.

Long-term convergence: a closer look

An areal pattern in Ireland

- Southern Irish English: /t d/ *tin den* ≠ /t̪ d̪/ *thin then*[16]
- Irish: /t d/ *team deck* [tiːmʲ dɪkʲ] ≠ /t̪ d̪/ *tinn* 'ill' [t̪ʲiːn] *doigh* [d̪ʌ] 'pain'[17]
- Pre-/r/ dentalization: [t̪r d̪r], *[tr dr]
  - Irish English, north and south[18]
  - Irish: [t̪ d̪] in *trail*, *motor*, *history*…

- English [θ ð] > Irish English [t̪ d̪] usually analysed as L2 imposition,[19] but could be simplification / markedness reduction
- English [t d] was borrowed as [t̪ d̪] prior to the growth of English competence in the community: separate L1-actuated transfer
- Dentalization: not Irish > English substrate[20,21]

Problems with directionality: the Balkan schwa

- Many languages of the Balkan Sprachbund have undoubtedly phonemic central non-low vowels
  - Romanian *câmp* < CAMPUM 'field', *fără* < FORĀS 'without', *văzduh* < Slavic **vъzduxъ* 'sky'
  - Bulgarian *zəb* < **zǫbъ* 'tooth'
  - Albanian *këngë* < Latin CANTICAM 'song'
  - Macedonian[22]
    - Northern dialects: *sən* 'dream' < **sъnъ*, *dən* 'day' < **dьnь*
    - South-eastern dialects: *vək* 'wolf' < **vl̥kъ*
- Often listed as a shared sound pattern, one of the few phonetic 'Balkanisms',[23] noted already in the earliest accounts of the Sprachbund.[24]
- A skeptical view:[25]
  - Different historical sources[26]
  - No obvious mechanisms beyond unadapted borrowings, which does not seem that powerful, even where plausible

Shared sound change under L1 agentivity

Some possible sources of convergence:

- Perceptual magnet effects[27]
- *Shared sound change*

  Co-territorial vernaculars with parallel outcomes of the nasal schwa:[28]

- *ə̃ > ɔ in SE Macedonian and Meglenoromanian
- > ə(N) in Albanian, Aromanian, W Macedonian
- > ɔ̃ > ɔN in Albanian, SW Macedonian

[16] Jeffrey L. Kallen. 2013. *Irish English*. Vol. 2: *The Republic of Ireland*. Berlin & New York: Mouton de Gruyter.

[17] Brian Ó Curnáin. 2007. *The Irish of Iorras Aithneach, County Galway*. Dublin: Dublin Institute for Advanced Studies.

[18] Kallen, *The Republic of Ireland*; Warren Maguire. 2020. *Language and dialect contact in Ireland: The phonological origins of Mid-Ulster English*. Edinburgh: Edinburgh University Press.

[19] Markku Filppula. 1999. *The grammar of Irish English: Language in the Hibernian style*. London: Routledge.

[20] Maguire, *Language and dialect contact in Ireland*.

[21] If anything, the fact that dentalization is found in Scotland and can be sufficiently advanced along the life cycle to be a stem-level rule would suggest that it is, if anything, more likely to have been a borrowing from English/Scots into Irish.

[22] Božidar Vidoeski. 1999. *Dijalektite na makedonskiot jazik*. Vol. 1. Skopje: Makedonska akademija na naukite i umetnostite.

[23] Petya Asenova. 2002. *Balkansko ezikoznanie*. 2nd edn. Sofia: Faber.

[24] Afanasij Seliščev. 1925. Des traits linguistiques communs aux langues balkaniques: Un balkanisme ancien en bulgare. *Revue des études slaves* 5(1/2). 38–57.

[25] Brian D. Joseph. 2009. Broad vs. localistic dialectology, standard vs. dialect. In Stavroula Tsiplakou, Marilena Karyolemou & Pavlos Pavlou (eds.), *Language variation — European perspectives II: Selected papers from the 4th International Conference on Language Variation in Europe (ICLaVE 4), Nicosia, June 2007*, 119–134. Amsterdam: John Benjamins.

[26] Unstressed vowel reduction, pre-nasal raising, centralization of back vowels…

[27] Blevins, 'Areal sound patterns'.

[28] Marjan Marković. 2007. *Aromanskiot i makedonskiot govor ot ohridsko-struškiot region (vo balkanski kontekst)*. Skopje: Makedonska akademija na naukite i umetnostite; Victor A. Friedman. 2018. Reflexes of Common Slavic nasal vowels in southwest Macedonian dialects revisited: An areal and balkanological account. In Christina Y. Bethin (ed.), *American contributions to the 16th International Congress of Slavists, Belgrade, August 2018. Linguistics*, 121–138. Bloomington, IN: Slavica.

What is the direction of this transfer? These developments are sometimes considered a 'substrate' feature, but this is clearly unsatisfactory. At the same time, there does not seem to be a clear reason why one of the languages should be obviously the 'source'.

Shared sound change?

If anything, we *should* expect multilingual speakers to do this!

How pervasive is shared change?

Proto-Balto-Slavic	Lithuanian	Latvian	Latgalian	Gloss
*rankā?	ra[ŋ]kà	r[uo]ka	rūka	'hand'
*źansís	ž[aː]sìs	z[uo]ss	zūss	'goose'
*pénki	pe[ŋ]kì	pieci	pīci	'five'

Standard account:

- Latvian and Latgalian: loss of nasal with lengthening and raising > diphthongization
- Lithuanian:
  - VN > Ṽ > V: except before stops
  - Before stops: coda place assimilation

A provocation

Lithuanian dialect outcomes following Zinkevičius:[29] looks like raising to *oN* > *uN* in Eastern Aukštaitian and in Žemaitian

- Why not VN > Ṽː > raising
- > denasalization
- > VN before stops
- ...the latter is, uncontroversially, exactly what happened in Polish

The usual answer to 'why not?' is 'parsimony', but that ignores the parallel in qualitative developments on the Latvian side

[29] Zigmas Zinkevičius. 1966. *Lietuvių dialektologija: Lyginamoji tarmių fonetika ir morofologija*. Vilnius: Mintis.

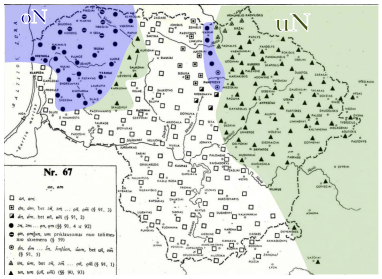

Figure 2: Lithuanian dialect outcomes

How pervasive is shared change?

- Other *possible* examples are not very difficult to find
  - Long vowel diphthongizations in Polabian and Wendland/Altmark German[30]
  - Pharyngealization segmentation in Neo-Aramaic, Gorani and Kurdish[31]
  - Retroflexion of **ll* > *ɖɖ* in Southern Italian and local Greek[32]
  - Vowel developments in Romance and Western South Slavic[33]
- Long-term balanced bilingualism that enables such change does not seem as common in (ahem) Western Eurasia as elsewhere

[30] Peter Wiesinger. 2004. Niederdeutsche und dravänopolabische Lautentwicklungen im Wendland und in der Altmark. In Dieter Stellmacher (ed.), *Sprachkontakte: Niederländisch, Deutsch und Slawisch östlich von Elbe und Saale*, 249–300. Frankfurt am Main: Peter Lang.

[31] Khan & Mohammadirad, *Language contact in Sanandaj*.

[32] Giuseppe Falcone. 1973. *Il dialetto romaico della Bovesia*. Milano: Istituto Lombardo di Scienze e Lettere.

[33] Willem Vermeer. 1989. Traces of an early Romance isogloss in Western Balkan Slavic. *Slavistična Revija* 37(1–3). 15–30.

- Even for established Sprachbünde like the Balkans the situation may need some nuance[34]
- We need much more work on diverse contexts that centres the multilingual repertoire

[34] Andrey N. Sobolev. 2021. Separation and symbiosis between Slavs and Albanians as continuum of linguistic contact situations: New challenges for new data. In Andrey N. Sobolev (ed.), *Between separation and symbiosis: South Eastern European languages and cultures in contact*, 27–58. Berlin & New York: Mouton de Gruyter.

Convergence of systems

- Shared sound changes explain synchronically converged systems primarily through diachrony
- This is in line with much current thinking in phonology[35] and typology[36]
- Can this explain all instances of phonological convergence?

[35] Juliette Blevins. 2004. *Evolutionary phonology: The emergence of sound patterns*. Cambridge: Cambridge University Press.

[36] Sonia Cristofaro. 2019. Taking diachronic evidence seriously: Result-oriented vs. source-oriented explanations of typological universals. In Karsten Schmidtke-Bode et al. (eds.), *Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence*, 25–46. Berlin: Language Science Press.

Homoplasy

> What is shared is not the changes but the system that the changes bring about[37]

- Homoplasy: different diachrony, convergent synchrony[38]
- Possible explanations:
  - Importation via lexical borrowings
  - Perceptual magnet effects[39]
  - Convergence/transfer of synchronic pattern? Often argued to be difficult/impossible!

[37] Hans Heinrich Hock. 2022. *Principles of historical linguistics*. 3rd edn. Berlin & New York: Mouton de Gruyter, 682 on Indo-Aryan retroflexes.

[38] Roger Lass. 1997. *Historical linguistics and language change*. Cambridge: Cambridge University Press; Freek Van de Velde & Joop van der Horst. 2013. Homoplasy in diachronic grammar. *Language Sciences* 36. 66–77.

[39] Blevins, 'Areal sound patterns'.

An example: High Latvian vowel 'reduction'

- High Latvian[40]

  *a ['vodu͡ot] 'drive.INF' ~ ['povada] 'reins'

  *o absent in native vocabulary

- East Slavic:

  *a [tra'va] 'grass' ~ ['travi] 'grass.PL'

  *o [va'da] 'water' ~ ['vodi] 'water.PL'

  *e [sʲas'tra] 'sister.NOM' ~ ['sʲestrʲin] 'sister.ADJ'

- Both languages end up with ['o] ~ [a] alternations: why?

[40] Ilja A. Seržant. 2010. Phonologische Isoglossen des Hochlettischen, Nord-Ost-Litauischen, Nord-West-Russischen und Weißrussischen. *Baltic Linguistics* 1. 193–214.

Vowel reduction: diachrony

- Diachrony of High Latvian
  1. *a > o except before front vowels/palatal consonants
  2. Allophonic alternation, with /o/ in the elsewhere context
     - Compare with Standard Latvian *gads* ~ *gadi*…
     - *gods* 'year.NOM.SG' ~ *gadi* 'year.NOM.PL'
  3. *ɛ > a in non-palatal contexts leads to phonemicization: /a/ ≠ /o/
- Diachrony of East Slavic
  - The usual interpretation is *o, e > a in unstressed syllables

  - If true, nothing like High Latvian: lowering not raising
  - Admittedly there is a dissident view that treats East Slavic as raising sensitive to the right-hand context[41]
- Either the 'dissidents' are right and then we do have shared change…[42]
- …or we have a convergence of synchronic systems that does not (yet) fit into our typology

[41] George Shevelov. 1964. E > 'O ou 'O > E dans les langues slaves de l'Est? *Revue des études slaves* 40(1). 183–190; Paul Wexler. 1977. *A historical phonology of the Belorussian language*. Heidelberg: Carl Winter Universitätsverlag; Juhani Nuorluoto. 2006. Is there a sound change of '*e* > *o*' in Russian? In Juhani Nuorluoto (ed.), *The Slavicization of the Russian North: Mechanisms and chronology*, 293–308. Helsinki.

[42] But there are good Slavic-internal reasons to reject the alternative analysis…

Contact-induced non-divergence

Varieties that exist in contact with other languages can fail to participate in innovations found in non-contact varieties

- Pyrenean Romance *pleká* 'fold' < PLĬCARE, *saper* 'know' < SAPĒRE vs. Spanish *llegar*, *saber*: cf. Basque *katea* 'chain' < CATĒNAM, *bake* 'peace' < PĀCEM[43]
- Breton *hañv* 'summer', *deñved* 'sheep.PL' vs. Welsh *haf*, *defaid* < **samos*, **damatī*:[44] cf. nasal vowels in Gallo-Romance
- English is the only Germanic language to have maintained both PGmc [θ] and [w], both segments also present in Welsh[45]

[43] Fredrick H. Jungemann. 1950. *La teoría del sustrato y los dialectos hispano-romances y gascones*. Madrid: Editorial Gredos.

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

[45] J. R. R. Tolkien. 1963. English and Welsh. In Henry Lewis (ed.), *Angles and Britons: The O'Donnell Lectures*, 1–41. Cardiff: University of Wales Press.

How to approach this?

- This situation seems not uncommon, but how do we handle it beyond vague appeal to 'reinforcement'?
- Historical linguists tend to prefer synapomorphy[46] to symplesiomorphy,[47] but are we losing information here?

[46] Shared innovation

[47] Shared retention

Dealing with retentions

- *In general*, the answer has to be aggregating the data with typological methods[48]
- The *specific problem in phonology* is the high probability of parallel developments:
  - Phonetic grounding of sound change
  - Lineage-specific trends, i. e. *drift*

[48] Kaius Sinnemäki et al. 2024. A typological approach to language change in contact situations. *Diachronica* 41(3). 379–413.

L1 agentivity and contact in phonology: summary

- Many aspects where the framework is a good fit
- L1 agentivity conducive to maintaining or increasing complexity
  - Non-canonical structures can be acquired/transferred via L1 learning mechanisms
  - Perpetuation of structures via shared sound change
- Issues that require more work
  - Contact-driven non-divergence
  - Homoplasy

  - Do we always have the stable multilingual context to support these convergences?

Change under L2 agentivity

Shift-induced interference in phonology

- This *sounds* like it should be unproblematic: subversion effects under conditions of language shift
- Especially phonetic detail is widely understood to be L2-hard and subject to imposition
- No shortage of proposals in the literature ascribing sound change to substrates/language shift

How does phonological imposition happen?

- Three mechanisms for propagation of L2-driven phonological change
  - Ethnolectalization: contact-influenced variety stabilizes as distinct
  - Users of contact-influenced variety are a majority in the community
  - De-ethnolectalization and spread of originally contact-influenced features via community-internal dynamics
- Does this happen?
  - Ethnolectalization: Hebridean English, post-Sámi Northern Norwegian
  - Numerical preponderance: requires particular sociohistorical situations: Southern Irish English[49]
  - De-ethnolectalization ⁉
- Much more work required on what exactly gets imposed in what situation[50]

[49] Filppula, *The grammar of Irish English*.

[50] Natvig, 'Levels of representation in phonetic and phonological contact'.

Phonologically invisible language shifts

- There are plenty of arguments in the literature *reconstructing* past contacts from phonological evidence, but do we have *documentation*?
- In documented cases of complete language shift, phonological influence seems quite elusive
  - Latin: plenty of evidence for individual bilingualism,[51] but clear substrate effects in phonology are rare to non-existent![52]
  - Ulster English: no strong evidence for Irish substrate in the phonology[53]
  - Similar absences in Manx English,[54] Cornish English[55]

[51] J. N. Adams. 2003. *Bilingualism and the Latin language*. Cambridge: Cambridge University Press.

[52] J. N. Adams. 2007. *The regional diversification of Latin, 200 BC–AD 600*. Cambridge: Cambridge University Press.

[53] Maguire, *Language and dialect contact in Ireland*.

[54] Christopher Lewin. 2017. 'Manx hardly deserved to live': Perspectives on language contact and language shift. *Zeitschrift für celtische Philologie* 64(1). 141–206.

[55] Martyn F. Wakelin. 1975. *Language and history in Cornwall*. Leicester: Leicester University Press.

What's going on?

- In these well-documented cases, language shift is *slow*[56]
- The community shifts over time, but at any given stage the proportion of shifters is low

[56] See Maguire, *Language and dialect contact in Ireland*, for detailed argumenation for Ulster.

- Phonetic-phonological non-target forms may attract a social penalty in a way that grammatical features do not[57]
- Social dynamics rarely conducive to propagation of contact-induced features

[57] On this difference see Penelope Eckert & William Labov. 2017. Phonetics, phonology and social meaning. *Journal of Sociolinguistics* 21(4). 467–496.

The take-away

Whole-community L2-driven phonological change may be quite a bit rarer than we think![58]

[58] For similar skepticism, see Joseph C. Salmons. 2015. Language shift and the Indo-Europeanization of Europe. In Robert Mailhammer, Theo Vennemann & Birgit Annette Olsen (eds.), *The linguistic roots of Europe: Origins and development of Indo-European languages*, 147–169. Copenhagen: Museum Tusculanum Press.

Areal effects and drift

Some 'areal' effects in northern Europe

- Preaspiration
- Sonorant preocclusion: *nn > dn
- Tonal accents
- Initial stress[59]
- Contrastive quantity[60]

[59] Joseph C. Salmons. 1992. *Accentual change and language contact: Comparative survey and case study of early northern Europe*. London: Routledge.

[60] Andrea-Eva Ewels. 2009. *Areallinguistik und Sprachtypologie im Ostseeraum: Die phonologisch relevante Vokal- und Konsonantenquantität*. Frankfurt am Main & New York: Peter Lang.

- The languages are in contact, but the sociohistorical situation does not allow for L2-actuated phonological change: instead, many of the parallels emerge from the operation of the life cycle on similar starting points
- This is a theory of drift[61]

[61] Joseph, 'Demystifying drift'.

L2 agentivity and contact in phonology: summary

- L2-driven phonological change clearly exists at the individual level
- Community-wide phonological imposition requires very specific sociohistorical circumstances, which may be relatively rare
- Even for languages in contact, 'substrate' influence may not be visible in phonology

Some lessons from microvariation

Microvariation in related languages

Mid vowel changes/alternations in Slavic

- Backing in *non-palatal right-hand contexts*
  - Belarusian, Russian, Ukrainian, Sorbian: e > o / {j č ž š}__
  - Belarusian, Russian, (some?) Ukrainian, Sorbian: Ce > C^{j}o
  - Polish: e > o, ä > a, ę > ǫ / __[coronal]
  - Eastern Bulgarian, Czech: ä > a
- Fronting/raising in *palatal right-hand contexts*
  - Bulgarian: ä > e
  - Czech: ä > ě
- Fronting in *soft left-hand contexts*

- East Slavic dialectal ę > (ä >) e / C^j__
- Northern Russian $C^j aC^j > C^j eC^j$
- Czech *přehláska*: u o > i e / C^j__

Microvariation and the life cycle

- The changes are similar, but not inherited as such
  - Differences in conditioning
  - Late chronology
- 'Common phonetic tendencies':[62] but *what does that mean?*
- Within the life cycle: inherited phonetic rule, parallel stabilization[63]

Inherited phonetic rules

- Iskarous & Kavitskaya:[64] patterns of palatalization across Slavic follow from synchronic phonetic variability, as observed in conservative languages
- Low-level, but *non-trivial* and *lineage-specific*
- Slavic: following hard coronals cause backing/inhibit fronting
  - East Slavic C_1ьRC_2 > C^joRC when C_2 is coronal, similar in Polish
  - Lechitic umlaut
  - Czech dialects: following hard coronal blocks *t d* > t^j d^j before front vowels
  - Jakubinskij's Law in Čakavian: ě > i except before coronal followed by back vowel
- Another inherited phonetic rule with variation in stabilization
- Not trivial at all typologically: if anything, coronals often affiliate with front vowels![65]

What does this mean for language contact?

- Apparently convergent developments need significant care
- Inferring population contact needs to be balanced against
  - Possibilities of parallel development
  - Sociohistorical context

NB! I am *not* saying that any internal explanation is better than a contact explanation!

- In particular, *non-trivial* phenomena do carry some signal, if we can interpret it
  - Do the similarities with High Latvian provide an argument for the raising theory of East Slavic *akan'e*?
  - Can we revisit Balkan Romance 'breaking' in light of the Slavic *preglas*?

[62] Henning Andersen. 1998. Dialektnaya differentsiatsiya obscheslavyanskogo yazyka: Paradoks obshchikh tendentsiĭ razvitiya s razlichnymi lokal'nymi rezul'tatami. In Robert A. Maguire & Alan Timberlake (eds.), *American contributions to the Twelfth Congress of Slavists, Cracow, September 1998*, 566–600. Bloomington, IN: Slavica Publishers.

[63] see for this argument applied to Finnic and Sámi consonant gradation Pavel Iosad. Forthcoming. The life cycle of phonological patterns explains drift in sound change: The case of Uralic consonant gradation. In Holly Kennard et al. (eds.), *Historical Linguistics 2022: Selected papers from the 25th ICHL, Oxford, 1–5 August 2022*. Amsterdam: John Benjamins.

[64] Khalil Iskarous & Darya Kavitskaya. 2018. Sound change and the structure of synchronic variability: Phonetic and phonological factors in Slavic palatalization. *Language* 94(1). 43–83.

[65] Elizabeth Hume. 1996. Coronal consonant, front vowel parallels in Maltese. *Natural Language & Linguistic Theory* 14(1). 163–203.

Some conclusions

- The study of language contact is very exposed to the lack of communication between theoretical phonology and historical-typological linguistics
- Phonology is special in ways that create challenges for this research programme
- Both of these are crucial to future progress:
  - Theoretically informed approach to what a sound pattern is
  - Serious engagement with the sociohistorical context
- Some important things that I think are true
  - Contact-induced change in phonological *systems* is rarer than we think
  - The place to look is often very localized contact between vernaculars
  - … and we need a much broader view of what is possible in terms of social interaction in diverse communities