

# Classifying trans-phonologization: a typological study

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## Phonologization

Phonologization is a form of grammaticalization in which something not grammar *becomes* grammar (Yu 2013: 25) → Something *phonetic* is made *phonological*  
*Intrinsic* variation in the speech signal becomes *extrinsic* (Hyman 1976: 408)

**Trans-phonologization** is a subset of such phonologization processes

“something becomes phonological *at the expense of* something else” (Hyman 1976: 410)

“phonologization of one phonetic cue is often accompanied by the de-phonologization of another” (Yu 2013: viii)

## Trans-phonologization

A previous contrast is **no longer maintained** as a different cue is **phonologized**

- New cue is often a phonetic byproduct of the original contrast
- Original cue becoming neutralized, or the segment holding that cue is lost

**Working definition:** the migration of phonological contrast to a different region of phonetic space, and/or to a new temporal point/landmark in the speech stream (p.c. Flego, S. 2024)

## Example: Tonogenesis

Voicing contrast → Pitch (F0) contrast

- Starting pitch on [a] is higher after [p] than after [b] as a voicing byproduct
- Pitch difference becomes exaggerated; eventually becomes the main contrastive feature rather than the stop voicing
- Voicing contrast is neutralized, leaving only the pitch contrast

<i>Stage I</i>	<i>Stage II</i>	<i>Stage III</i>
pá [ — ]	pá [ — ]	pá [ — ]
bá [ ↗ ]	bă [ ↗ ]	pă [ ↗ ]

## Distinguishing trans-phonological phenomena

### What **CAN** be trans-phonological:

- ◉ Tonogenesis
- ◉ Registrogenesis
- ◉ Nasalization
- ◉ Palatalization
- ◉ Labialization
- ◉ Aspiration
- ◉ Devoicing
- ◉ Accent contrast
- ◉ ...

### What is **NOT** trans-phonological:

- ◉ Assimilation processes where the triggering segment remains fully phonological
- ◉ Instances where the new cue occurs inconsistently (can't become contrastive if the segment doesn't consistently maintain the new cue in a given environment)

## Current proposal

To date, no attempt at a comparative study of trans-phonological phenomena has been made.

- ◉ Trans-phonologization is either discussed very generally within the context of phonologization, or in specific (usually tonogenetic) cases
- ◉ Potential processes (tonogenesis, palatalization, nasalization, etc.) are considered in their own typologies individually, without labeling or distinguishing the trans-phonological cases in their midst

*Trans-phonologization* is a handy term for describing these kinds of changes, but is there more to it than simply a descriptive label?

## Research Question & Hypothesis

- ◉ Are there larger patterns within trans-phonologization that occur, regardless of which phonetic cues are involved?
- ◉ Do specific types of patterns emerge, and are they motivated by acoustic, perceptual, or articulatory factors?

### **Hypothesis:**

There are patterns that exist across trans-phonologization phenomena. These patterns can help re-classify these cases across the conventional categorizations that exist based on phonetic cue.

Language	Reference Source	Family	Phonological Process	Language	Reference Source	Family	Phonological Process
Chaha	Banksira 2013	Afro-Asiatic	labialization, palatalization	Malagasy	Howe 2017	Austronesian	tonogenesis
Panāra	Lapierre 2022	Jean	devoicing	Khmer (Phnom Penh)	Kirby 2014	Austro-Asiatic	tonogenesis
Greek	Baltazani et al. 2016	Indo-European	palatalization	Kmhmu' (Northern, Eastern)	Kirby, Pittayaporn & Brunelle 2022	Austro-Asiatic	tonogenesis
Laomian	Zhang, Jin & Liu 2023	Sino-Tibetan	palatalization	Vietnamese	Thurgood 2002	Austro-Asiatic	tonogenesis
Arabic (Najdi)	Mahzari 2023	Afro-Asiatic	palatalization	Tamang	Mazaudon & Michaud 2008	Sino-Tibetan	tonogenesis
Bamileke	Hyman 1976	Niger-Congo	aspiration	Tai (Cao Bằng)	Pittayaporn 2017	Kra-Dai	registrogenesis
Kodi	Lovestrand, Balle & Edwards 2022	Austronesian	palatalization	Chrau	Thanh, Brunelle & Nguyen 2022	Austro-Asiatic	registrogenesis
Korean	Bang et al. 2018	Koreanic	tonogenesis	Raglai	Brunelle, Brown & Hà 2022	Austronesian	registrogenesis
Chru	Brunelle et al. 2020	Austronesian	registrogenesis	Terena	Orphão de Carvalho 2021	Arawakan	accentual contrast
Afrikaans	Coetzee et al. 2018	Indo-European	tonogenesis	Goidelic (historical)	Jackson 1967	Indo-European	nasalization

## Language Sample



Variable	Description	Example entries
Directionality	Whether the contrast migration is moving from a preceding sound to a following one, vice versa, or both	to following sound; to preceding sound; in both directions
Process type	How this case of trans-phonologization is typically categorized based on the phonetic cues determining the resulting phonological contrast	labialization; palatalization; tonogenesis; registrogenesis; nasalization; aspiration; accent; aspiration
Segment	Whether the process involves a migration of a contrast from a C(onsonant) to a V(owel), vice versa, C to C, or V to V	CC; VV; CV; VC
Adjacency	Whether the original and new contrast-holding segments are immediately adjacent to one another or at a distance	yes; no
Position	Position of the original and new contrast-holding segments within the syllable	onset; coda; nucleus; syllable; any
Morphology	Whether the process is morphologically restricted in any way	yes; no

## *Coding Variables*

## Analysis

Whether the change in contrast goes from a **consonant to a vowel**, a **vowel to a consonant**, **vowel to vowel**, or a **mix of these** seems to have implications for other features of the change.

These types will be referred to as:

- ◉ C to V,
- ◉ V to C,
- ◉ V to V, and
- ◉ Mixed (both C to C and V to C, *or* C to C and C to V)

Type	Segment	Directionality	Adjacency	Morphology	Processes	Example
1	V to C	To preceding segment	Yes	No	Palatalization, Aspiration	<b>Aspiration (Bamileke)</b> pu → p <sup>h</sup> o po → po
2	C to V	To following segment	Yes	No	Nasalization, Tonogenesis, Registrogenesis	<b>Tonogenesis</b> pa → pá ba → pă
3	V to V	To following segment	No	Yes	Accentual contrast	<b>Accent Contrast (Terena)</b> VCVCV → ∅CV:CV CVCV → CVCV
4	Mixed	To preceding segment, sometimes following	Variable	Variable	Palatalization, Labialization, Devoicing	<b>Palatalization (Chaha)</b> ajf → ef k'jt' → k'it'

## Preliminary Groupings

Language	Process	Segment	Directionality	Adjacency	Morphology
Chaha	Palatalization, labialization	C to C, C to V	To preceding segment	Sometimes	Yes
Panãra	Devoicing	C to C, V to C	To preceding segment	Yes	No
Kodi	Palatalization	C to C, V to C	To preceding and following segments	Sometimes	No

*“Mixed” Grouping could be developed further*

## Limitations of current work & future directions

- Small sample size - happy to take suggestions!
  - Many tonogenesis/registrogenesis cases are from the same region/analytical tradition
- “Type 4” is more like an “etc.” category
  - A larger sample could turn up more “mixed” examples
- Varied definitions/terminology from source material
- Other variables to consider
  - Syllable boundaries
  - Unit under effect: some processes may be suprasegmental rather than segmental

## Potential value of a classification

- ◉ Supplements existing understanding we have about these phenomena
  - It could help understand the bounds in which these phenomena occur
  - Picks up where other typologies leave off
- ◉ Consolidates a set of trans-phonological phenomena into one study
  - First attempt at a somewhat systematic discussion of trans-phonologization across different processes/cues
- ◉ Contributes to our understanding of phonological change patterns more broadly
  - Phonological typologies are still relatively rare
  - Fits with larger trends of studying more dynamic changes (e.g., “what’s where why”) (Bickel 2007; Hyman 2018)

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