



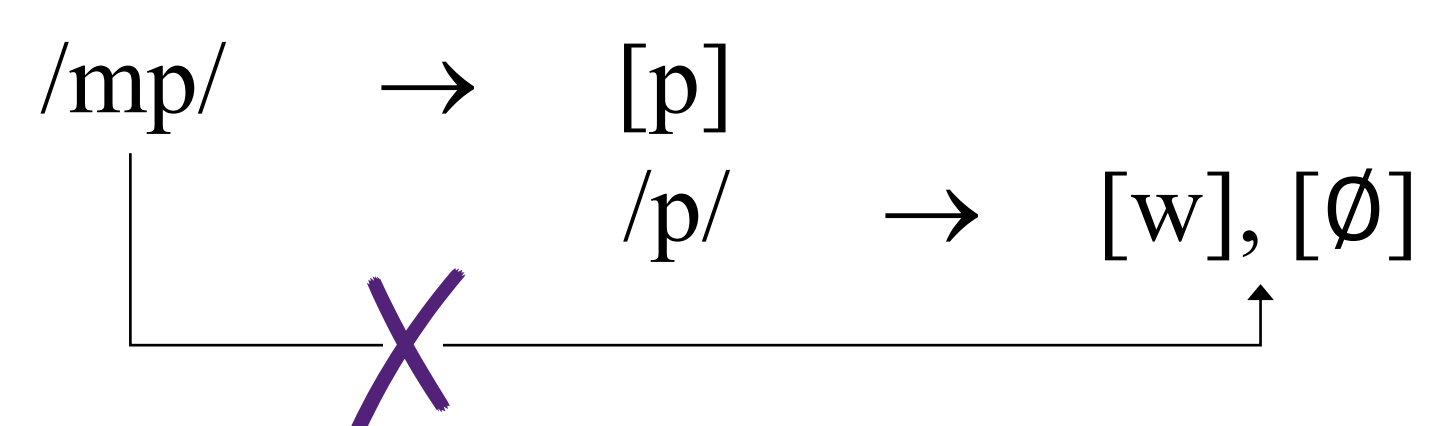
Distancial faithfulness in Yindjibarndi cluster reduction

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I. Overview

- In Yindjibarndi (Wordick 1982), nasal cluster dissimilation (NCD) and lenition interact.
- Together they instantiate a **chain shift**:
 - NCD results in /mp/ → [p]. Lenition results in /p/ → [w] or deletion (to [∅]).
 - [p]s derived through NCD do not lenite!



- This is easy to account for with ordered rules. It's harder with constraints.
- This poster:**
 - Proposes an analysis that appeals to distancial faithfulness (after Kirchner 1996).
 - Shows that an alternative, in Stratal OT (e.g. Kiparsky 2000, Bermúdez-Otero 2018), has problems.

II. Data

- Lenition is common in Yindjibarndi; most stops lenite at least optionally in morpheme-initial, intervocalic position.
- Our interest is in the behavior of /p/ (Table 1; all data from Wordick 1982, conversion to IPA by me).
 - /p/ deletes between two [u]s.
 - /p/ lenites to [w] in all other intervocalic contexts.

Table 1: /p/ lenition and deletion

UR	SR	Gloss
/muvu+pa/	[muvu-wa]	'wintertime'
/waru+pura:/	[waru-ura:]	'twilight'
/ɲucu+piri/	[ɲucu-wiri]	'soft'
/muɲa+pa/	[muɲa-wa]	'close (emphatic)'
/maja+pura:/	[maja-wura:]	'house'
/ɲaɬa+piri:/	[ɲaɬa-wiri:]	'long-neck turtle'
/wirwi+pura:/	[wirwi-wura:]	'upwind'
/pari+pa/	[pari-wa]	'devil (emphatic)'
/waɭi+piɬi/	[waɭi-wiɬi]	'lightning'

- In NCD, the nasal portions of /mp/ and /ɲk/ delete given the presence of a preceding nasal-stop cluster.
 - Notice (Table 2): the [p]s resulting from NCD do not lenite.
 - (We'll examine how /ɲk/ behaves later!)

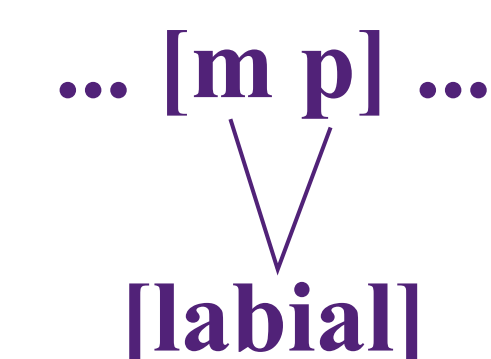
Table 2: /m/ deletion due to NCD

UR	SR	Gloss
/munti+mpa/	[munti-pa]	'really'
/ɬaŋka+mpa/	[ɬaŋka-pa]	'enough'
/ɲinku+mpuru+ɲu/	[ɲinku-puru-ɲu]	(no gloss)
/ɲula+mpa/	[ɲula-mpa]	'at this'
/para:+mpa/	[para:-mpa]	'long time'
/ɲalija+mpuru+ɲu/	[ɲalija-mpuru-ɲu]	(no gloss)

- In sum: **only underlying singleton /p/ can lenite. Derived [p] cannot!**

III. Proposal

- The idea:**
 - In an [mp] cluster, both consonants are linked to the same instance of [labial].



- For this analysis, it makes sense to think of [labial] as a gesture that comes with a durational value. This value depends on what it's linked to.
- Some evidence (Table 3), from Yindjibarndi audio in the UCLA Phonetics Lab Archive, suggests that [mp] is longer than [p], which is longer than [w].

Table 3: results of preliminary phonetic study

Segment(s)	Word	No. of tokens	Average duration
[mp]	[ɬampa]	3	117 ms.
	[ɬampi]	3	
[p]	[warapa]	3	97 ms.
	[cipi]	4	
[w]	[ciriwi]	3	60 ms.
	[wirwi]	3	

- The data suggest it is possible to reduce the duration of [labial] by one step (from [mp] to [p], or [p] to [w/∅]), but not by two.

- More formally**, we can think of this as a distancial faithfulness constraint:

IDENTDURATION[labial]: assign one * for each input labial gesture with duration x whose output correspondent has a duration of $x \pm 2$, where x is defined below.
 $[w/\emptyset] = 1, [p] = 2, [mp] = 3$

- IDENTDURATION[labial] dominates the markedness constraint(s) responsible for /p/ lenition and deletion. We'll call this constraint *VpV. (See Stanton 2022 for more analysis.)
 - Evidence that IDENTDURATION[labial] \gg *VpV:
 - /munti+mpa/ → [munti-pa] $>$ *[munti-wa]

IV. On a stratal alternative

- A possible alternative: a stratal analysis. /p/ lenition precedes NCD.
 - /p/ lenition is probably **word-level**: it applies word-internally, and there are a few different sources of exceptions. (These criteria are based on Rubach 2008:470.)
 - NCD is probably **phrase-level**: virtually exceptionless, applies everywhere.
- An immediate problem for this approach: NCD feeds /k/-lenition (Tables 4, 5).

Table 4: /k/ lenition and deletion

UR	SR	Gloss
/paɬu+kaɬa:/	[paɬu-waɬa:]	'bird'
/malu+ku/	[malu-u]	'shade'
/maja+kaɬa/	[maja-aɬa]	'house'
/warapa+ku/	[warapa-u]	'grass'
/ɲamaji+ku/	[ɲamaji-u]	'tobacco'
/wanɬi+kaɬa:/	[wanɬi-aɬa:]	'man'

Table 5: NCD feeds /k/ lenition and deletion

UR	SR	Gloss
/wuntu+ɲka/	[wuntu-wa]	river
/wanɬa+ɲka/	[wanɬa-a]	stick
/maɲci+ɲka/	[maɲci-a]	death adder
/miɾka+ɲka/	[miɾka-ɲka]	fork
/paɲɲa+ɲka/	[paɲɲa-ɲka]	bark
/malu+ɲka/	[malu-ɲka]	shade

- /k/ lenition is probably **word-level**, for the same reasons as /p/ lenition.
- If NCD occurs between two word-level processes, it must be word-level too.
- This is an example of stratum-internal opacity (see Broś 2016, Bermúdez-Otero 2019).

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