Trigger Deletion in Gurindji[*]

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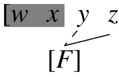
1 Introduction

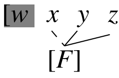
- It is generally accepted in the literature that unbounded spreading is *myopic* (Wilson 2003): spreading processes cannot look ahead.
  - Given a regressive spreading process for some feature [*F*], and a domain [*w x y z*], the decision to spread [*F*] from *z* to *x* does not take into account whether or not [*F*] can continue to spread to *w*.

(1) Spreading is myopic

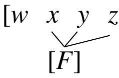
a. *Step 1:* spread [*F*] from *z* to *y*



b. *Step 2:* spread [*F*] from *y* to *x*



c. *Step 3:* don't spread [*F*] from *x* to *w*



  - An example of a *non-myopic* process would be one in which the language realizes that [*F*] cannot spread all the way to *w*, and therefore decides not to spread from *z* to *x*. This is argued to be unattested.

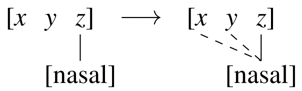
- The apparent absence of non-myopia (Wilson 2003, McCarthy 2009) poses a problem for classic Optimality Theory (Prince & Smolensky 2004).
  - Since evaluation is *global*, nothing prohibits a process spreading [*F*] from *z* to *y* from checking to see if can spread all the way to *w*.
  - In short, global evaluation predicts non-myopia.

- Accounting for the absence of non-myopic patterns has led analysts to propose substantial revisions to the architecture of OT. For example:
  - Wilson (2003) proposes a new class of constraints, *targeted constraints*, which mimic the stepwise progression of iterative spreading.
  - McCarthy (2009) proposes to redefine harmony-driving constraints, and to constrain GEN, i.e. the set of candidates considered.

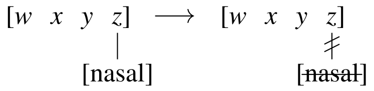
- **Today's presentation:** I will suggest that a non-myopic nasal spreading process is attested in Gurindji (Pama-Nyungan; McConvell 1988).
  - Evidence for this spreading process is indirect, but I will argue that it is the best available interpretation of the data.
  - *The basic idea*: when full application of nasal spreading would reach a certain kind of blocker, the trigger deletes.

(2) Trigger deletion in Gurindji (schematic, simplified)

a. If blocker [*w*] is absent, [nasal] spreads from *z* to *x*.



b. If blocker [*w*] is present, [nasal] deletes.



  - This is non-myopic in the sense just discussed: whether [nasal] can spread from *z* to *x* depends on the presence or absence of blocker *w*.

- **Implication:** we should not exclude the possibility of non-myopic patterns.
  - Modifications that allow for only myopic patterns are unncessary.
  - The existence of the Gurindji pattern suggests that the ability to predict non-myopic patterns is a *feature* of globalist evaluation, not a bug.

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Roadmap

- Section 2: Presents the Gurindji data, and the proposed interpretation.
- Section 3: Presents an analysis that can derive the facts.
- Section 4: Briefly discusses one alternative interpretation.
- Section 5: Briefly surveys other non-myopic processes.

2 Nasal cluster effects in Gurindji

- The evidence for non-myopia in Gurindji comes from nasal cluster effects, a term for a restriction on multiple nasal-stop sequences.
  - In lgs. exhibiting these effects, words like *a**mb**a**d**a* and *a**b**a**nd**a* are ok.
  - But words like *a**mb**a**nd**a* are dispreferred.
- There are a number of repairs to banned NC_1VNC_2 (e.g. Meinhof 1932, Meeussen 1963, Herbert 1986, Jones 2000, Blust 2012, Stanton 2015).
  - Many languages delete either the first oral ($\mathbf{NC_1}VNC_2 \rightarrow \mathbf{N_1}VNC_2$) or the second nasal ($NC_1V\mathbf{NC_2} \rightarrow NC_1V\mathbf{C_2}$) consonant.
  - Regardless of repair, in most languages the application of nasal cluster effects exhibits segmental or contextual restrictions.
- **Our focus**: Gurindji (Pama-Nyungan, McConvell 1988), where repair of $NC_1 \ldots NC_2$ depends on the material intervening between NC_1 and NC_2.
  - If the intervening material contains only [+continuant] segments, nasal cluster effects must occur (subject to morphological restrictions).

(3) Nasal cluster effects across [+continuant] segments
a**mb**awa**nd**a → a**mb**awa**d**a (*a**mb**awa**nd**a)

  - If however the intervening material also contains one or more [-continuant] segments, nasal cluster effects are blocked.

(4) No nasal cluster effects across [-continuant] segments
a**mb**ata**nd**a → a**mb**ata**nd**a (*a**mb**ata**d**a)

- **This section**: the pattern in Gurindji, illustrated in Section 2.1, can be seen as a symptom of an unbounded process spreading [nasal] regressively.

2.1 Data

- In most dialects of Gurindji, illicit $NC_1 \ldots NC_2$ is repaired through deletion of N_2's [nasal] feature. How this is accomplished depends on NC_2's identity.
  - If NC_2 it is *homorganic*, N_2 deletes (5).

(5) N_2 deletion in Gurindji (McConvell 1988: 138)[1]
a. /ka**ɲɟ**u+**mp**al/ → [ka**ɲɟ**u-**p**al] 'across below'
(cf. [kajiɻa-mpal] 'across the north')
b. /ka**nk**a+**mp**a/ → [ka**nk**a-**p**a] 'upstream'
(cf. [kani-mpa] 'downstream')

  - If NC_2 is *heterorganic*, N_2 oralizes (6).

(6) N_2 oralization in Gurindji (McConvell 1988: 145)
a. /ɲa**mp**a-**n-p**ula ɲa-ɲa/ → [ɲa**mp**a-**t-p**ula ɲa-ɲa]
'what did you two see?'
b. /ɲatɟa**ŋ-p**a-**n-p**ula ɲa-ɲa/ → [ɲatɟa**ŋ-p**a-**t-p**ula ɲa-ɲa]
'how many did you two see?'

- The difference between these repairs can be captured in an analysis in which N_2 deletion is preferred, subject to a ban on the deletion of place features.
  - Assuming place features are multiply linked in homorganic clusters: N_2 deletion is permitted, as the place features are also linked to C_2.
  - But in heterorganic clusters, deletion of N_2 would result in the deletion of its place features. So it just loses [nasal] instead.
  - The difference between these two processes will not be crucial here: both result in the destruction of N_2's [nasal] feature. From this point forward, I will refer to them collectively as *N_2 modification.*
- In all examples in (5–6), N_2 modification is local: only a single vowel intervenes between the two NCs.
- N_2 modification can also be non-local; as previewed, the applicability of non-local N_2 modification depends on the nature of the intervening material.
  - **Table 1**: if the intervening material contains only [+continuant] segments (i.e. vowels, glides, liquids), then N_2 modification is obligatory.
  - **Table 2**: if the intervening material contains one or more [-continuant] segments (i.e. nasals, oral stops), N_2 modification is impossible.

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[1] The Gurindji transcriptions in this paper follow McConvell's, except the following: <rt> = /ʈ/, <j> = /ɟ/, <rn> = /ɳ/, <ny> = /ɲ/, <ng> = /ŋ/, <rl> = /ɭ/, <ly> = /ʎ/, <rr> = /ɾ/, <r> = /ɻ/.

Table 1: Segments that can intervene in N_2 modification

Intervener	*Form* *Gloss*	*Page*
…**l**…	/kankula-mpa/ → [kankula-pa] top-LOC (‘on the high ground’)	140
…**ɭ**…	/waɲɟi-pa**ɭ**a-ŋku/ → [waɲɟi-wa**ɭ**a-ku] which-NOW-2.SingObj (‘which’)	140
[2] …**ɾ**…	/man-ku-**ɾ**a-ŋku/ → [man-ku-**ɾ**a-ku] take-FUT-HORT-2.PlSubj (‘let him take you’)	141
…**ɻ**…	/ɟawuɾa-ɲ-ka**ɻ**i-kuɲɟa/ → [ɟawuɾa-ɲ-ka**ɻ**i-wuɟa] steal-NOM-OTHER-COMIT (‘with another thief’)	140
…**w**…	/yaŋki-**k**umpalŋ/ → [yaŋki-**w**upalŋ] ride-LEST (‘to avoid riding’)	139
…**j**…	/ɲampa-wu-paɭa-**j**i-nta/ → [ɲampa-wu-waɭa-**j**i-ta] what-DAT-NOW-1.SingObj-2PlSubj	140

Table 2: Segments that block N_2 modification

Blocker	*Form* *Gloss*	*Page*
…**p**…	[ŋu-ŋanti**p**a-ŋkulu ɲa-ɲa] AUX-1.ExpPlObj-3.PlSubj see-PAST	141
…**t**…	[nampiji**t**a-wuɲɟa] female-LACKING	141
…**ʈ**…	[paɳku-**ʈ**i-ŋkurra cross.cousin-KINSHIP-ALL	141
…**k**…	[waɲɟi-**k**a-nta] which-LOC-2PS	141
…**m**…	[kuja-ŋka-**m**a-ŋku pa-ni] thus-LOC-TOP-2SO hit-PAST	141
…**n**…	[ŋu-n-ɟu**n**u-ŋkuɭa juwa-ni] AUX-2SS-RFL-LOC put-PAST	141
…**ɳ**…	ŋanta-**ɳ**a-ŋku ja-n-ku OPTATIVE-2SS-2SO go-EM.FUT-AUX	141
…**ɲ**…	[ɲatɟaŋ-pa-**ɲ**uɾa-ŋkulu ma-ni] how.many-LINK-2PO-3PS get-PAST	142
…**ŋ**…	[ɲampa-**ŋ**ala-ŋkulu ɟaji-ŋku] what-1IPO-3PS give-FUT	142

- **Summary**: illicit $NC_1 \ldots NC_2$ in Gurindji is repaired through either deletion or oralization of N_2. Both repairs get rid of N_2's [nasal] feature.
  - N_2 modification is obligatory when all segments intervening between NC_1 and NC_2 are [+continuant].
  - N_2 modification is blocked when the material intervening between NC_1 and NC_2 contains one or more [-continuant] segments.
- **The main question**: why can N_2 modification apply across segments of some types, but not segments of other types?

2.2 Interpretation

- Although McConvell does not discuss the phonetics of nasality, the set of interveners is consistent with generalizations about nasal spreading.
  - The sets of segments that participate in nasal harmony processes are subject to implicational laws (e.g. Schourup 1973, Walker 2000).
  - In (7): spreading through a segment class with some value *x*, implies spreading through all segment classes with values lower than *x*.

(7) Implicational hierarchy in nasal spreading (from Walker 2000: 26)

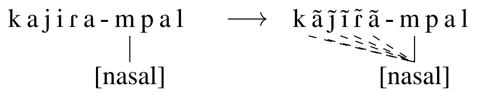
① Vowels ② Glides ③ Liquids ④ Fricatives ⑤ Stops ⑥

$\longleftrightarrow$

high *compatibility with nasalization* *low*

- My analysis of the Gurindji pattern takes seriously the link between possible interveners in N_2 modification and the typology of nasal harmony.
- **The idea**: normally, Gurindji has a process of long-distance nasal harmony that spreads through segments with a value of ④ and lower. /kajira-mpal/ demonstrates: [nasal] spreads regressively from N_2 until blocked by /k/.

(8) Proposed long-distance regressive [nasal] spreading in Gurindji



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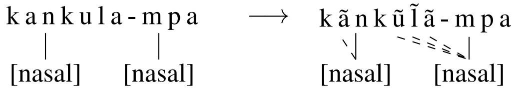
[2] A brief note about the data: Observable in the …**ɻ**…and …**w**…forms above (plus others) is a process leniting postvocalic morpheme-initial /p/ and /k/ to [w]. This process is “fairly general” (McConvell 1988: 139), and applies outside of the NC_1VNC_2 context. The forms in Table 1 show that N_2 modification can apply across a [w], regardless of whether it is underlyingly /w/, /p/, or /k/. The …**l**…form, however, shows us that lenition does not apply to singleton stops that result from N_2 deletion. Underlying /kankula-mpa/ surfaces as [kankula-pa]; the resulting singleton [p] does not further lenite to [kankula-wa]. While interesting, this opaque pattern is not relevant to the generalization of interest – that N_2 modification applies across all surface continuants.

- Assuming that such a process is active in Gurindji: if NC_1 and NC_2 are separated by only vocoids, approximants, or liquids, [nasal] spreading will result in nasalization of the vowel immediately following NC_1.

(9) Long-distance [nasal] spreading in $NC_1 \ldots NC_2$



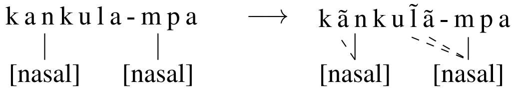
- There is reason to believe that nasalized vowels are dispreferred post-NC.
  - Beddor & Onsuwan (2003): an important perceptual cue to the N–NC contrast is the identity of the following vowel.
    - ⋗ NCs are most accurately identified as NCs when followed by oral vowels, and Ns as Ns when followed by a nasal vowel.
    - ⋗ NCs followed by nasal vowels are regularly *misidentified* as Ns.
  - This difficulty translates into a typological dispreference: in a number of languages, NCs cannot precede nasal vowels (Stanton in prep).

Hypothesis!

- The source of the ban on $NC_1 \ldots NC_2$ sequences in Gurindji and elsewhere is not a dispreference for multiple NCs *per se*.
- Rather, it is a dispreference for NCṼ (on this see also Herbert 1977, Jones 2000, Stanton 2015) – which full application of regressive [nasal] spreading, in an $NC_1 \ldots NC_2$ context, would create.

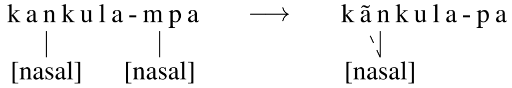
- Let us assume, then, that full application of [nasal] spreading is banned in Gurindji when it would create an NCṼ sequences. Faced with this impossibility, the language has several options.
  - The myopic, unattested option: spread nasality partway, then stop.

(10) Partial spreading of [nasal] in $NC_1 \ldots NC_2$

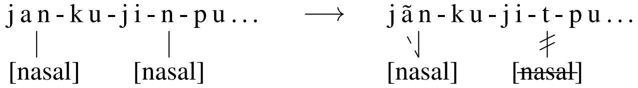


  - A non-myopic, attested option: delete the trigger.

(11) Homorganic NC_2: N_2 deletes

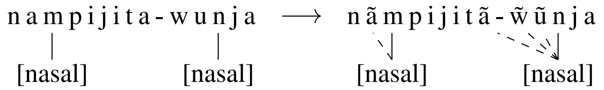


(12) Heterorganic NC_2: N_2's [nasal] feature deletes



- Claimed: [-continuant] segments block spreading. So when a [-continuant] segment intervenes in $NC_1 \ldots NC_2$, trigger deletion is unnecessary.
  - *Example*: in /na**mp**ijit̠a-wu**ɲɟ**ja/ '(animal) lacking a female' (McConvell 1988: 141), regressive spreading of [nasal] is arrested by the presence of an intervening /t/.

(13) [-continuant] segments block spreading



  - In (13) and similar examples, trigger deletion is unnecessary, as the vowel following NC_1 is not at risk of becoming nasalized.
- **Local summary**: Positing a regressive [nasal] spreading process allows us to make sense of constraints on interveners in Gurindji nasal cluster effects.
  - The segments that can intervene propagate [nasal]; the segments that can't block the spread of [nasal].
  - Viewed in this way, N_2 modification in Gurindji is just a strategy to avoid creating NCṼ – a sequence type known to be perceptually difficult, and typologically dispreferred.
- **Note**: if this is the correct analysis, then onset nasals must block the spread of nasality (e.g. /kuja-**ŋk**a-m̲a-**ŋk**u/ → [kujã-**ŋk**a-m̲ã-**ŋk**u]).
  - Unusual for a harmony system, but avoidance of anticipatory nasalization before onset nasals is attested in other Australian languages.
  - The facts I will assume, going forward:
    - ⋗ Vowels before *coda* nasals are nasalized.
    - ⋗ Vowels before *onset* nasals are not.

3 Analysis

- To account for the proposed distribution of vocalic nasality, we'll need a couple of markedness constraints.[3]
  - *VN]$_\sigma$: Vowels that precede coda nasals must be nasalized.

    (14) *VN]$_\sigma$: one * for each coda preceded by an oral V.

  - *ṼN: Vowels preceding other nasals aren't nasalized.

    (15) *ṼN: one * for each nasal preceded by a nasal Ṽ.

  - To derive the right result, *VN]$_\sigma$ >> *ṼN.

(16) No nasalization before onset nasals

/ama/	*VN]$_\sigma$	*ṼN
a. [ãmã]		*!
☞ b. [amã]		

(17) Nasalization before non-prevocalic nasals

/amba/	*VN]$_\sigma$	*ṼN
☞ a. [ãmba]		*
b. [amba]	*!	

- Next, we need a constraint driving harmony. The co-occurrence constraint in (18) prevents nasal continuants from being preceded by non-nasal ones.[4]

(18) *[∅nasal,+cont][nasal,+cont]: one * for each nasal continuant immediately preceded by a non-nasal continuant.

  - An implicit claim here: in Gurindji, the nasal *vowels* trigger harmony.
  - This is not crucial, but there is a precedent. In Pame Otomi (Gibson 1956), Lamani (Trail 1970), etc., harmony is triggered by nasal Ṽs; see also Safir (1982) on Capanahua.

- As [nasal] spreading creates new links between a [nasal] autosegment and the target segments, we know that *[∅nasal,+cont][nasal,+cont] (or SPREAD) dominates DEP-LINK[nas].

(19) DEP-LINK[nasal]: one * for every output segment linked to a [nasal] autosegment whose input correspondent is not linked to the same [nasal] autosegment.

- As [nasal] spreading is generally preferred to trigger deletion, we know that several constraints penalizing deletion dominate SPREAD.
  - Oralization (NK → TK) is dispreferred by MAX-LINK[nasal].

    (20) MAX-LINK[nasal]: assign one * for every input segment linked to a [nasal] autosegment whose output correspondent is not linked to the same [nasal] autosegment.

  - Deletion (NT → T) is dispreferred by MAX-SEGMENT.

    (21) MAX-SEGMENT: assign one * for every segment present in the input that does not have an output correspondent.

  - Both perform the same function, so I refer to them together as MAX.

(22) Derivation of normal [nasal] spreading

/kajiɾa+mpal/	*VN]$_\sigma$	SPREAD	MAX	DEP
a. [kajiɾa+mpal]	*!			
b. [kajiɾã-mpal]		*!		
c. [kajiɾa-pal]			*!	
d. [k̃ãj̃ĩɾ̃ã-mpal]				******!
☞ e. [kãj̃ĩɾ̃ã-mpal]				*****

  - Candidate (22a), where the pre-NC vowel is not nasalized, is eliminated by high-ranked *VN]$_\sigma$.
  - Candidate (22b), where harmony applies incompletely, is eliminated by SPREAD: a non-nasal continuant precedes a nasal continuant.
  - Candidate (22c), where the trigger deletes, satisfies the harmony constraint but is eliminated by MAX.
  - Candidate (22d), where harmony targets a voiceless stop without motivation, is eliminated by a gratuitous violation of DEP-LINK[nas].
  - Candidate (22e), where harmony applies up until the blocker segment, and then stops, is optimal.

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[3] The constraints defined in (14) and (15), as well as *NCṼ (defined later in (23)), can be more accurately implemented as constraints on the distinctiveness of various contrasts (e.g. Flemming 2002). For expositional purposes, I have not done this.

[4] [∅nasal] means the lack of a [nasal] specification; I assume here that nasality is privative, though this is not crucial to the analysis. Note that this constraint builds blocking effects into its definition, which Wilson (2003) and McCarthy (2009) argue against. Such a constraint is necessary here: different classes of blockers behave differently. NCs cause trigger deletion, but Ns and Cs cause normal, myopic blocking. Modeling this using an interaction of general AGREE and markedness constraints (e.g. *[nasal,-cont]) leads to a ranking paradox.

- In NC$_1$…NC$_2$ sequences, full spreading is dispreferred by *NCṼ.

(23) *NCṼ: one * for each NC sequence followed by a nasal vowel.

- We know that both *NCṼ and SPREAD dominate MAX, as trigger deletion is preferred to (i) nasalizing a post-NC vowel and (ii) incomplete spreading.

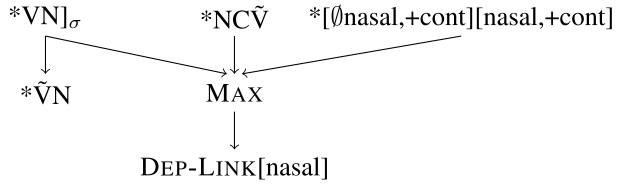
(24) Derivation of trigger deletion[5]

/kankula+mpa/	*VN]$_\sigma$	*NCṼ	SPREAD	MAX	DEP
a. [kãnkula-mpa]	*!				*
b. [kãnkulã-mpa]			*!		**
c. [kãnkul̃ã-mpa]			*!		***
d. [kãnkũl̃ã-mpa]		*!			****
☞ e. [kãnkula-pa]				*	*

- Candidate (24a), where the pre-NC V isn't nasalized, violates *VN]$_\sigma$.
- Candidate (24b), where spreading is incomplete, violates SPREAD.
- Candidate (24c), where spreading is incomplete, violates SPREAD.
- Candidate (24d), where full application of spreading nasalizes the post-NC vowel, is eliminated due to a fatal violation of *NCṼ.
- Candidate (24e), where the trigger deletes, avoids violating all of the top-ranked constraints, and is selected as optimal.

- A Hasse diagram summarizing the analysis is in (25).

(25) Summary of the analysis



- For this analysis of Gurindji, it's *crucial* that spreading can be non-myopic: whether or not it applies depends on the contents of the harmony domain.

4 Alternatives

- The analysis proposed above is *successful*, as it makes sense of the observed constraints on interveners.

- It is also *surprising*: trigger deletion is non-myopic, and non-myopic processes are not frequently documented. Reasonable to ask: is there a workable alternative interpretation of the data?

- **This section**: one potential alternative analysis of the basic Gurindji pattern could appeal to an OCP constraint, as in (26):

(26) *NC…NC: one * for each pair of NC sequences in a word.

  - A form like /ka**nk**a+**mp**a/ is penalized by *NC…NC.
  - The fact that /ka**nk**a+**mp**a/ surfaces unfaithfully, as [ka**nk**a-**p**a], shows that *NC…NC dominates FAITH.

- There are, however, a number of arguments that this analysis is not correct.

  - Beyond the more general arguments that nasal cluster effects are not dissimilatory effects (Stanton 2015), Gurindji displays several properties that make an OCP-based analysis difficult to formulate.

4.1 Constraints on Interveners

- In Gurindji, whether or not nasal cluster effects are attested depends on the nature of the intervening material. Distance between NCs does not matter.

  - If the intervening material contains only continuants, *NC$_1$…NC$_2$.

(27) NC$_1$…[+cont]…NC$_2$ ⟶ NC$_1$…[+cont]…C$_2$

  - But if it also contains non-continuants, NC$_1$…NC$_2$ is fine.

(28) NC$_1$…[±cont]…NC$_2$ ⟶ NC$_1$…[±cont]…NC$_2$

- This is unlike other dissimilatory processes we know.

  - Dissimilation becomes less likely to apply as the offending segments grow further apart (see Suzuki 1998, Zymet 2014, *pace* Bennett 2015).
  - Dissimilatory processes generally do not care about the identity of the intervening material (see Stanton 2016; cf. Cser 2010 on Latin, Suzuki 1998 and Bennett 2015 on Latin and several others).

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[5] Note that the tableau in (24) does not take into account all possible repairs to *NCṼ. I assume that N$_1$ or C$_1$ deletion ([kakũl̃ã-mpa] or [kanũl̃ã-mpa]) is ruled out by high-ranked constraints banning deletion of root material. Similarly, I assume that C$_2$ deletion is ruled out by a high-ranked constraint that bans deletion of non-nasal consonants.

  - In cases where dissimilatory processes exhibit blocking effects (Latin, Georgian, Yidiny), these effects can and should be analyzed as an interaction between two $*X \ldots X$ constraints.

- **In sum**: dissimilatory processes tend to care about *how much*, but not *what*, material intervenes. Gurindji displays the opposite sensitivity.

4.2 Constraints on Interveners, II

- Up to this point, we have focused only on repairs to $NC_1 \ldots NC_2$. But Gurindji can also repair $NC_1 \ldots N_2$ in some morphological contexts, when N_2 is word-final.
  - The suffix /–jin/ is usually realized as [–jin] (McConvell 1988: 147).

(29) a. kuɭa-jin 'from the south'
south-ELAT
b. kaːɾa-jin 'from the east'
east-ELAT

  - But when the /n/ in /–jin/ forms N_2 of an $NC_1 \ldots$ [+cont] $\ldots N_2$ sequence, it denasalizes (McConvell 1988: 148).

(30) a. /ka**ṉḵ**a+ji**ṉ**/ → [ka**ṉḵ**a-ji**ṯ**]
"from upstream"
b. /ka**ɲ̱ɟ̱**uli-ji**ṉ**/ → [ka**ɲ̱ɟ̱**uli-ji**ṯ**]
'from below'
c. /kuɭa-**ŋ̱ḵ**uɭa-ji**ṉ**/ → [kuɭa-**ŋ̱ḵ**uɭa-ji**ṯ**]
'from the south side of the river'
d. /kaːɾa-**ŋ̱ḵ**aɾa-ji**ṉ**/ → [kaaɾa-**ŋ̱ḵ**aɾa-ji**ṯ**]
'from the east side of the river'

  - Final N_2 oralization and pre-C N_2 oralization display the same constraints on interveners; these are instantiations of the same process.

- This complication is predicted by the analysis presented in section 3.
  - [nasal] is claimed to spread regressively from all coda nasals.
  - So $NC_1 \ldots NC_2$ and $NC_1 \ldots N_2\#$ should both be penalized.

- But for the OCP-based analysis, these data show that the analysis was incorrect: something as simple as $*NC \ldots NC$ is not going to do the trick.
  - The relevant constraint thus has to be one on multiple coda (i.e. non-prevocalic) nasals within the same word.

(31) $*N]_\sigma \ldots N]_\sigma$: one * for each pair of coda nasals in a word.

  - This kind of move is not unprecedented: Rose & Walker (2001: 510-512) argue that nasals sharing a syllabic role (or alternatively, a vocalic context) are more similar than nasals that don't.

- The proper formulation of the OCP constraint, however, makes it difficult to formulate a coherent generalization regarding the set of possible interveners.
  - In the forms in (30), stops do *not* block N_2 modification.
  - In the forms in (32) (from (Figure 2)), stops *do* block N_2 modification.

(32)

Blocker	*Form* *Gloss*	*Page*
…**p**…	[ŋu-ŋaṉṯi**p**a-ŋ̱ḵulu ɲa-ɲa] AUX-1.EXPPLOBJ-3.PLSUBJ see-PAST	141
…**t**…	[nam̱p̱iji**t**a-wuɲ̱ɟ̱a] female-LACKING	141
…**k**…	[waɲ̱ɟ̱i-**k**a-ṉṯa] which-LOC-2PS	141

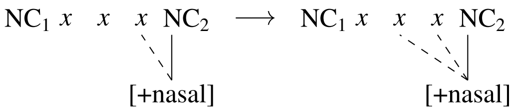
- At least two ways to respond to this problem:
  - (i) only intervocalic stops block N_2 modification, or
  - (ii) one intervening stop is transparent; two block.
  - In both cases, we must say that stops *sometimes*, but not *always* block N_2 modification. Nasals, by comparison, always block.

5 Outlook

- This talk has argued that nasal cluster effects in Gurindji are an example of *trigger deletion*, a particular kind of non-myopic harmony pattern.
- Although the evidence for the existence of a harmony process is indirect, I have argued that it is the best available interpretation of the data.
  - Under this analysis, we can make sense of the constraints on interveners: they diagnose restrictions on regressive [nasal] spreading.
  - The alternative discussed above, by contrast, does not. I am not sure other workable alternatives exist.

- The existence of the Gurindji pattern, then, is an argument for globalist evaluation: it cannot be derived if non-myopic interactions are ruled out.
    - In a framework where spreading is myopic (e.g. Serial Harmony, McCarthy 2009), the only outcome that can be derived in $NC_1 \ldots NC_2$ contexts is partial spreading (33). But this isn't what happens.

      (33) Partial spreading is myopic

    - But if non-myopic patterns are possible, why aren't they more common? I don't know…but Gurindji is not alone.
- Several systems exhibit non-local trigger-target relations: each individual target segment must be able to refer back to properties of the original trigger.
    - Baiyina Oroqen and Mọ̀ba Yorùbá (Walker 2014)
    - Sanskrit (Ryan 2016)
- There are a couple of systems that more closely resemble Gurindji, in that full application of a spreading process is dependent on the satisfaction of other constraints.
    - Central Veneto and Grado (Walker 2010, though cf. Kimper 2012)
    - Copperbelt Bemba (Bickmore & Kula 2013, also Jardine to appear)
    - Romanian (Steriade in prep)
- This small but growing class of non-myopic patterns suggest that the theory best-suited for the analysis of spreading process (and phonological patterns more generally) must be one in which evaluation is global.

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