

# MUTUAL COUNTERFEEDING IN BARI AS TWO SEPARATE COUNTERFEEDING INTERACTIONS



Rosa Fritzsche (U Leipzig)  
r.fritzsche@uni-leipzig.de

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UNIVERSITÄT  
LEIPZIG

## 1 Overview

- A mutual counterfeeding interaction in Bari (Eastern Nilotic; Yokwe 1987), involving spreading and dissimilation of High tones in post-verbal nouns, can be reinterpreted into two separate counterfeeding interactions (cf. Trommer 2017 for a containment-based OT approach)
- Bari interactions can be generated by theories that can handle simple counterfeeding but not mutual counterfeeding e.g. Serial rule based phonology
- Bari is not an argument in favour of theories that can generate mutual counterfeeding

## 2 Background

- **Mutual counterfeeding** (Wolf 2011) involves two rules that each can create the environment of the other rule, but neither applies to the output of the other rule.
- Ordering paradox in serial theories: Neither rule feeds the other, while simultaneous application can generate mutual counterfeeding (Chomsky & Halle 1968: fn. 5)

### Hypothetical example (Wolf 2011: 89)

- schwa-syncope and h-deletion can feed each other
- h-deletion applies and creates the input for schwa-syncope, which underapplies ((2a)); schwa-syncope applies and creates the input for h-deletion, which does not apply (2b)

- (1) a. **schwa-syncope**  $/ə/ \rightarrow \emptyset / \{V, \#\} (C) \_ (C) \{V, \#\}$  b. **h-deletion**  $/h/ \rightarrow \emptyset / \_ \{[-voc], \#\}$
- (2) a.  $/ehtəmu/ \rightarrow [etəmu]$  b.  $/ahəpi/ \rightarrow [ahpi]$

## 3 Data (Yokwe 1987)

### Spreading and Dissimilation

- Word-initial High tones (H) dissimilate to Low tones (L) after a word-final H (3) and word-final H can spread to a following noun with an initial L (4)
- (3) **H#HL**  $\rightarrow$  **H#LL**: dók + kópò  $\rightarrow$  dók kòpò 'fetched the cup'
- (4) a. **H#LL**  $\rightarrow$  **H#HL**: bék + ràbà  $\rightarrow$  bék rábà 'fixed the platform'
- b. **H#LH**  $\rightarrow$  **H#HH**: tór + bòngó  $\rightarrow$  tór bóngó 'tied the dress'
- c. **H#LF**  $\rightarrow$  **H#HF**: mát + wîñî  $\rightarrow$  mát wîñî 'drank the medicine'

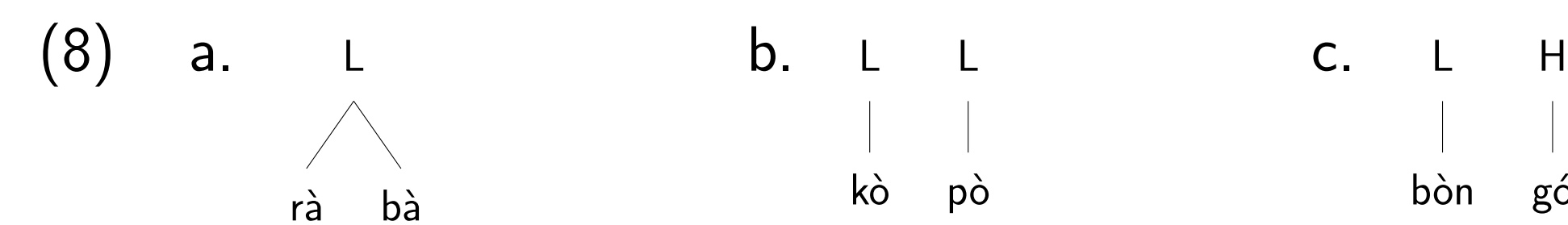
### Interactions

- Dissimilation can feed spreading:
- (5) **H#HH**  $\rightarrow$  **H#LL**  $\rightarrow$  **H#HL**: dép+kéré  $\rightarrow$  dép kèrè  $\rightarrow$  dép kère 'held the gourd'
- H-spreading counterfeeds H-Dissimilation:
- (6) **H#LH**  $\rightarrow$  **H#HH**: tór + bòngó  $\rightarrow$  tór bóngó  $\rightarrow$  tór bòngò 'tied the dress'
- H-Dissimilation counterfeeds H-Spreading:
- (7) **H#HL**  $\rightarrow$  **H#LL**: dók + kópò  $\rightarrow$  dók kòpò  $\rightarrow$  dók kópò 'fetched the cup'

## 4 Analysis

### Observation

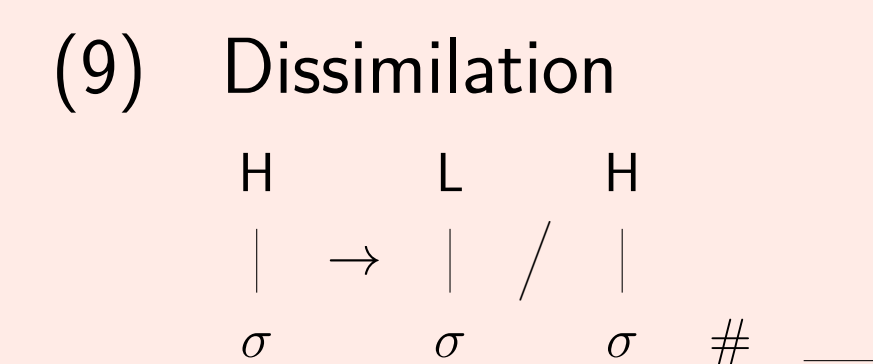
- In (4a) and (5), L is multiply linked to two syllables, see (8a)
- In /HL/  $\rightarrow$  /LL/ sequences, there are two distinct Ls (8b)
- In /LH/ (4b) and /LF/ (4c), there is a distinct L followed by an H (8c)



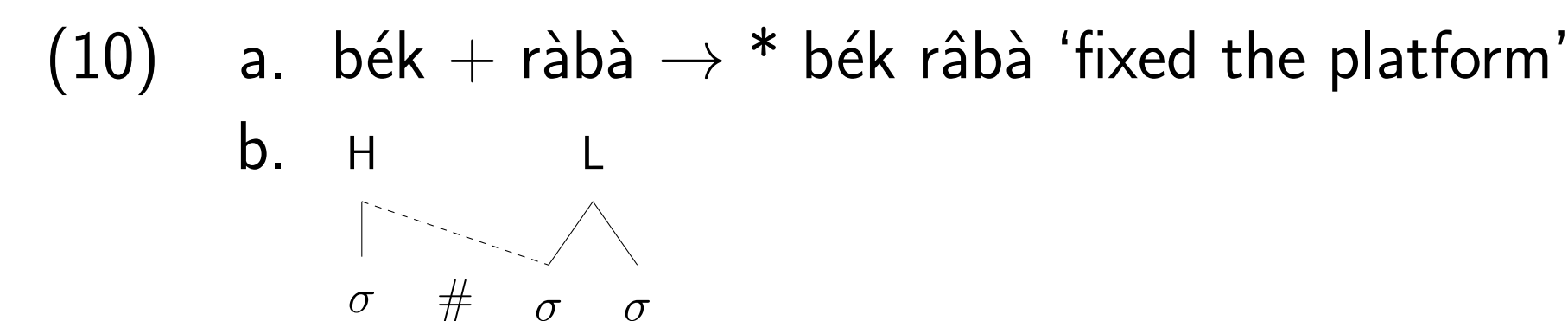
$\rightarrow$  Spreading applies to /LL/ only if the sequence consists of one multiply associated L

### Rule-based analysis

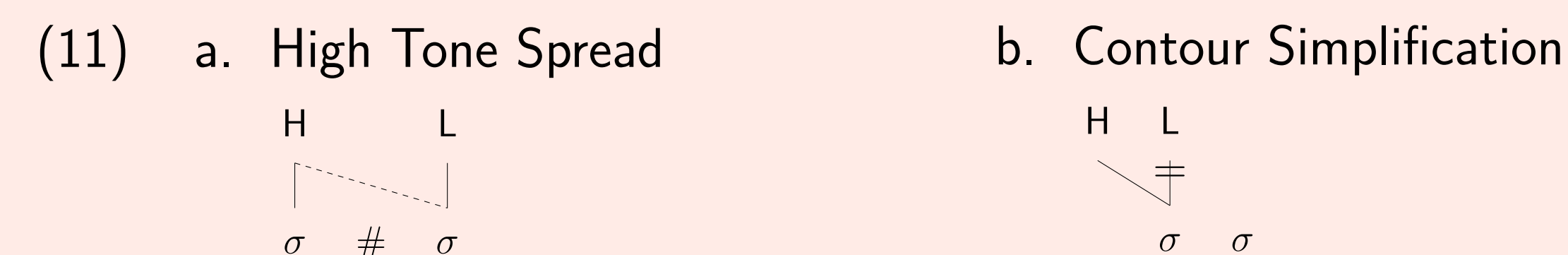
- Dissimilation changes an H to L after a word-final H:



- Spreading would create a falling tone but there is a general restriction against falling tones on non-final syllables in Bari (Yokwe 1987: 209):

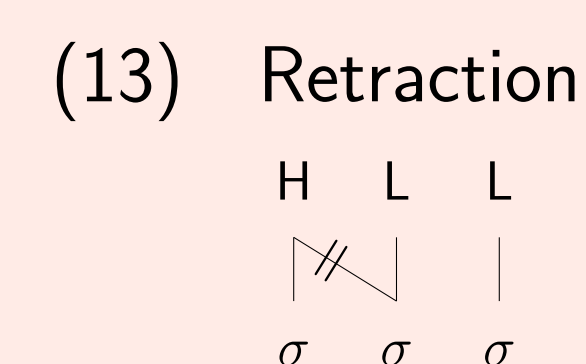


- What looks like spreading involves actually two operations: Linking H and de-linking L



(Yokwe 1987: 210)

- Splitting-up "H-spreading" allows us to order an additional rule in between
  - According to the earlier observation: Spreading to a TBU that was (not multiply) linked to an underlying H is not allowed
- (12) **H#HL**  $\rightarrow$  **H#LL**  $\rightarrow$  **H#HL**:  
dók + kópò  $\rightarrow$  dók kòpò  $\rightarrow$  dók kópò 'fetched the cup'
- In some environments, H is de-linked from a HL contour syllable (instead of L as with Contour Simplification)
  - Retraction (cf. e.g. Bresnan & Kanerva 1989) reverses the effect of High Tone Spread



## 5 Derivations

(14) UR	(5) H H	(6) H L H	(7) H H L
Dissimilation:		—	
High tone spread:			
Retraction:	—	—	
Contour Simplification:			—

### Interactions

- In (5) Dissimilation **feeds** H-Spread; H-Spread **feeds** Contour Simplific.
- In (6) H-Spread **feeds** Contour Simplific.; Contour Simplific **counterfeeds** Dissimilation
- In (7) Dissimilation **feeds** H-Spread; H-Spread **feeds** Retraction; Retraction **bleeds** Contour Simplific. and **counterfeeds** H-Spread

### Summary

- Re-interpretation of mutual counterfeeding is successful:
  - 1) The possibility of multiply linked tones can differentiate between contexts (this differentiates Bari from the Wolf 2011 example)
  - 2) Spreading can be split into two operations: Linking and de-linking a tone
- OT with local constraint conjunction (OT-LCC; Smolensky 1995; Moreton & Smolensky 2002) can also deal with Bari interactions (ask me about it in the discussion)

## 6 Conclusion

- Bari interactions can be reinterpreted as two separate cases of counterfeeding
- Serial rule based phonology can derive the data
- Bari interactions should be amenable to other theories that can derive counterfeeding but not mutual counterfeeding, e.g. OT-Containment (Trommer 2017), OT-LCC
- Bari interactions cannot be accounted for by simultaneous rule application

## References

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