

Mutual counterfeeding in Bari can be reanalysed as two separate counterfeeding interactions

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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. Wolf (2011: 89) provides a hypothetical case of mutual counterfeeding: /ə/-syncope (1a) deletes /ə/ except if it would create a cluster of more than two consonants and /h/-deletion (1b) deletes /h/ before consonants, glides or word-finally. Both processes can feed each other: in a /həC/ sequence, syncope can feed /h/-deletion, while in a /VhCəCV/ or /VCəhCV/ sequence /h/-deletion would feed /ə/-syncope.

- (1) a. /ə/ → ∅ / {V,#} (C)_(C){V,#} b. /h/ → ∅ / _{[-voc],#}

Mutual counterfeeding arises in (2): In (2a) /h/-deletion applies and creates the input for /ə/-syncope, which underapplies. In (2b), /ə/-syncope applies and creates the input for /h/-deletion, which does not apply. In serial rule-based theories this creates an ordering paradox as neither rule feeds the other, while simultaneous application can generate mutual counterfeeding (Chomsky & Halle 1968: fn. 5).

- (2) a. /ehtəmu/ → [etəmu] b. /ahəpi/ → [ahpi]

A reported case of mutual counterfeeding comes from Bari (Eastern Nilotic; Yokwe 1987) and involves spreading and dissimilation of High tones in post-verbal nouns. Trommer (2017) provides a successful analysis of these interactions in Bari in parallel OT with containment (Prince & Smolensky 1993; Trommer & Zimmermann 2014).

The Bari case has important implications for theories of phonology as most theories cannot generate mutual counterfeeding. If the notion that Bari exhibits a mutual counterfeeding interaction is correct, it would be an argument for a rule-based theory with simultaneous rule application over e. g. rule based-phonology with ordered rules or OT.

Claim: In this talk, I show that a reinterpretation of spreading and dissimilation makes the Bari case amenable to theories that can handle simple counterfeeding but not mutual counterfeeding. I present a conceivable analysis with ordered rules to illustrate the claim that Bari does not exhibit mutual counterfeeding but rather two separate cases of counterfeeding. This conclusion eliminates a potential argument in favour of simultaneous rule-based phonology and containment. Moreover, the ordered rules analysis can derive a feeding interaction in Bari, which simultaneous rule-based phonology is not able to generate.

A reported case of mutual counterfeeding in Bari: Bari word-final high tones (H) can spread to a following noun with an initial low tone (L) (3a), while initial H dissimilate to L after word-final H (3d). In HH nouns, dissimilation feeds spreading (3b) and spreading can counterfeed dissimilation in LH sequences (3c). However, an ordering paradox arises as dissimilation can also counterfeed spreading in HL nouns (3d).

- (3) a. **H#LL** → **H#HL**: bék + ràbà → bék
ràbà ‘fixed the platform’ c. **H#LH** → **H#HH**: tór + bòngó → tór
bóngó *→ tór bòngó ‘tied the dress’
b. **H#HH** → **H#LL** → **H#HL**: dép + kéré
→ dép kèrè → dép kéré ‘held the gourd’ d. **H#HL** → **H#LL**: dók + kópò → dók
kópò *→ dók kópò ‘fetched the cup’

Re-interpretation of Bari interactions: I assume that *Dissimilation* changes an H to an L after a word-final H-tone. Moreover following Yokwe (1987), the spreading process in (3a) can be re-interpreted into involving two operations: Firstly, *High tone spread* links an H with an L-associated syllable across a word boundary and creates a falling tone and secondly, *Contour simplification* delinks an L from a non-final syllable with HL contour. The latter is motivated by the more general restriction against falling tones in non-final positions in Bari (Yokwe 1987: 209).

In a serial rule-based approach, this split into two processes makes it possible to order a rule in between H-spread and contour simplification to prevent spreading from applying. Taking into consideration the derivation in (3d), it seems that (pre-theoretically) spreading does not apply if there are two distinct L-tones (one created by dissimilation and one present in the underlying representation). I propose the additional rule *Retraction* (see e.g. Bresnan & Kanerva 1989), which disassociates an H from a HL contour syllable that is followed by syllable with a distinct L-tone. Retraction and contour simplification conspire to eliminate falling tones in penultimate contexts. I propose the rule ordering and derivations in (4): In /H#HH/ sequences (3b), dissimilation feeds H-spread so that the first syllable of the post-verbal noun is associated with an H and an L simultaneously. This syllable is disassociated with the L by contour simplification, resulting in [H#HL] (column 1). In /H#LH/ → [H#HH] derivations (3c) H-spread feeds contour simplification. Crucially, this creates the environment for dissimilation which, however, does not apply. Thus contour simplification counterfeeds dissimilation (column 2). In the case of /H#HL/ → [H#LL] (3d), dissimilation feeds H-spread, which in turn feeds Retraction as there are two distinct L-tones in the sequence. Instead of delinking the L, the previously spread H is disassociated from the syllable. Therefore, Retraction counterfeeds H-spread and bleeds contour simplification (column 3). The re-analysis shows that both counterfeeding interactions are separate from each other since they involve different processes. The rules can be ordered in a way that derives the data in (3).

(4)

UR			
Dissimilation: 		—	
High tone spread: 			
Retraction: 	—	—	
Contour Simplification: 			—

This reanalysis can also be modelled in OT with local constraint conjunction (OT-LCC; Smolensky 1995; Moreton & Smolensky 2002), which can derive counterfeeding, but crucially not mutual counterfeeding. However, an analysis is left out due to space constraints.

Conclusion: I demonstrated that mutual counterfeeding in Bari can be reanalysed as involving two separate counterfeeding interactions. This is illustrated by the fact that serial rule-based phonology (and OT-LCC), which are able to account for counterfeeding but not for mutual counterfeeding, can derive the data.

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