

A Mechanism for Duke-of-York Mappings in Harmonic Serialism

Brandon Prickett ♦ bprickett@umass.edu ♦ brandon-prickett.com

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1. Introduction

- Recent work (Gleim 2019; Rasin 2019) has argued against *Harmonic Serialism* (HS; McCarthy 2000) because it can't capture *feeding Duke-of-York* mappings (Pullum 1975; also known as *fed counterfeeding on focus*, Baković 2011).
- Here I show that a novel family of constraints can provide HS with a way to overcome this limitation.

2. Duke-of-York Opacity

- Whenever three phonological processes (*A*, *B*, *C*) interact such that...
 - Process *A* creates an environment for *B* to apply,
 - B* applies,
 - And then *C* erases that environment later in the derivation...

...A feeding Duke-of-York mapping is created.
- McCarthy (2003) used a hypothetical variant of Hebrew ("Quasi-Hebrew") to illustrate these:
 - Epenthesis*: /qarbi/ → qarəbi
 - Spirantization*: qarəbi → qarəvi
 - Syncope*: qarəvi → [qarvi]
- Analyses that use feeding Duke-of-York mappings have been argued for in Polish (Rubach 2003), Arapaho (Gleim 2019), and Palestinian Arabic (Rasin 2019).

3. Vanilla HS and Duke-of-York

- Vanilla versions of HS fail to capture Duke-of-York derivations because HS requires *harmonic improvement*.
 - Although see Lamont (2021) for a way of capturing Duke-of-York without violating this principle.
- That is, intermediate forms must be more harmonic than their predecessors, which prevents processes that reverse a change made earlier in the derivation:

	UR: /qarbi/	NoCODA	MAX	*V[-cont]V	IDENT(cont)	DEP
Step 1	qarbi	W*		L		L
	qabi		W*	*		L
	ɛp qarəbi			*		*
Step 2	qarəbi	NoCODA	MAX	*V[-cont]V	IDENT(cont)	DEP
	qarəbi			W*	L	
	qarbi	W*	W*		L	
Step 3	ɛp qarəvi				*	
	qarəvi	NoCODA	MAX	*V[-cont]V	IDENT(cont)	DEP
	⊗ qarvi	W*	W*			

Final SR: [qarəvi] ✗

4. Boomerang Constraints

- To allow HS to capture Duke-of-York mappings, I propose *boomerang constraints*, which motivate the insertion of temporary structures over the course of a derivation.
- Crucially, the temporary structures only exist in intermediate forms and are absent from both URs and SRs.

5. Capturing Duke-of-York

- Boomerang constraints allow HS to capture Duke-of-York, since the removal of temporary structures can violate harmonic improvement.
- This is shown in the tableaux below for the case of Quasi-Hebrew, with a boomerang constraint that motivates the insertion of temporary schwas (denoted as ə) after codas.

	UR: /qarbi/	BOOM(ə/Coda)	MAX	*V[-cont]V	IDENT(cont)	DEP
Step 1	qarbi	W*		L		L
	qarəbi	W*		*		*
	ɛp qarəbi			*		*
Step 2	qarəbi	BOOM(ə/Coda) <td>MAX</td> <td>*V[-cont]V</td> <td>IDENT(cont)</td> <td>DEP</td>	MAX	*V[-cont]V	IDENT(cont)	DEP
	qarəbi			W*	L	
	qarbi	W*	W*		L	
Step 3	ɛp qarəvi				*	
	qarəvi	BOOM(ə/Coda) <td>MAX</td> <td>*V[-cont]V</td> <td>IDENT(cont)</td> <td>DEP</td>	MAX	*V[-cont]V	IDENT(cont)	DEP
	ɛp qarəvi					
	qarvi	W*	W*			

Final SR: [qarvi] ✓

6. Discussion

- Boomerang constraints allow Harmonic Serialism to capture feeding Duke-of-York interactions.
 - Thus, HS *can* represent languages like Arapaho (Gleim 2019) & Palestinian Arabic (Rasin 2019).
- Future work should pair a theory of learning with this and other frameworks that can capture Duke-of-York (e.g., Stratal OT; Kiparsky 2000), to see which best predict typology.