

## 1. Introduction

- Moro (Kordofanian) exhibits phonologically-conditioned mobile affixation (Jenks & Rose 2015 [J&R]).
- J&R argue that mobility is driven by the interaction between a number of (morpho)phonological constraints on tone and an alignment constraint regulating the position of the relevant affixes.
  - However, because of certain assumptions regarding the constraint set, J&R's formal analysis diverges slightly from their big-picture framing.
- \* I show that paring down J&R's constraint set **reaffirms and streamlines** J&R's original argument, reiterating the **central role of alignment** in affix mobility.

## 2. Data

- Moro has three tone patterns, arbitrarily distributed across Aspect/Mood/Deixis (AMD) constructions:
  - Left-H:** a single (or double) high tone at/near the left edge of the stem [J&R's "DEFAULT"]
  - All-H:** all of the stem's TBU's bear a high tone (spread from the AMD suffix)
  - No-H:** none of the stem's TBU's bear a high tone
- Object markers (OM) on verbs predictably alternate between suffixal position and prefixal position:
  - In most cases, OM's surface as suffixes, e.g. (2a) and (2b.iii). [Data in (2) from J&R:270–271.]
  - But, in "Left-H" categories (2b), underlyingly **high-toned** OM's (2.ii) surface as prefixes (2b.ii).

Aspect/Mood/Deixis category	i. No OM	ii. 2SG OM /ɲá/	iii. 3PL OM /lo/
a. Perfective /-ó/ + "No-H"	vələð-ó	vələð-á-ɲá	vələð-á-lo
b. Consec. Imperfective /-ó/ + "Left-H"	vələð-ó	<b>ɲá-vələð-ó</b>	vələð-á-lo

## 3. Stem Tone Analysis: Paring Down the Constraint Set

- I follow J&R in using Cophonology Theory (Inkelas 1998 et seq.): different tone and mobility patterns derived by distinct rankings of the same set of constraints, indexed to particular AMD categories.
  - I diverge from J&R by reducing the constraint set from eight (J&R:285,288) to just four.
- The factorial ranking of the three constraints in (3) derives the three stem tone patterns (4) (cf. (1)).
  - (3a) collapses two of J&R's constraints: MACROSTEM-H and ALIGN(H, L; MACROSTEM, L).
  - (3b,c) are adopted directly from J&R. [← see J&R:286–287 for discussion]
- \* J&R's MAX-H, HAVE-H, and \*H **do not contribute** to the analysis of stem tones *or* mobility.

See J&R:§3.1, and Jenks & Rose 2011 more generally, for the finer details of the "Left-H" tone pattern, which could motivate reintroduction of similar constraints. The point is that they do not contribute to mobility, which is obscured in J&R.

- ALIGN(STEM, LEFT; H, LEFT):** Assign a \* if the left edge of the Stem is not aligned to the left edge of some H tone. [ALN]
  - DEP-IO(H):** Assign a \* for each inserted H tone. [DEP]
  - INTEGRITY-IO(H):** Assign a \* for each input H tone linked to multiple output TBUs. [INT]

a. <b>Left-H</b> Cophonology				b. <b>All-H</b> Cophonology				c. <b>No-H</b> Cophonology			
/vələð-ó/	INT	ALN	DEP	/vələð-ó/	ALN	DEP	INT	/vələð-ó/	INT	DEP	ALN
a. vələð-ó	*!			a. vələð-ó			*	a. vələð-ó	*!		
b. vələð-ó			*	b. vələð-ó		*!		b. vələð-ó		*!	
c. vələð-ó		*!		c. vələð-ó	*!			c. vələð-ó			*

## 4. Stem Tone Analysis Summary

- By stripping the analysis down to the base, we can now see the logic behind each pattern in (5):
  - Left-H:** acquire a left-edge H tone through H-epenthesis
  - All-H:** acquire a left-edge H tone through H-spreading
  - No-H:** be content without a left-edge H tone
- \* J&R's inclusion of additional tonal constraints (MAX-H, HAVE-H, \*H) introduces unnecessary additional differences in ranking between the stem-tone cophonologies (cf. J&R:288, ex. (31)).
  - Furthermore, they complicate the analysis of mobility, obscuring the role of alignment.

## 5. Affix Mobility: The Role of Alignment

- J&R demonstrate that OM's surface as suffixes in all cases but one:
  - When the stem has the **Left-H** cophonology ((1a)/(4a)) and the OM is underlyingly **H-toned**.
- Following J&R (p. 289, ex. (33)), this can be derived by ranking **RIGHTMOST** [RTM], an alignment constraint that advocates for suffixal position of the OM, *below* DEP in the Left-H cophonology (6).
  - Still yields suffixation for non-H-toned OM's (7), because prefixation (7d) won't help satisfy ALN.

(6) H-toned OM + <b>Left-H</b> stem ⇒ <i>prefix</i>					(7) L-toned OM + <b>Left-H</b> stem ⇒ <i>suffix</i>				
/vələð-ó, ɲá/	INT	ALN	DEP	RTM	/vələð-ó, lo/	INT	ALN	DEP	RTM
a. vələð-ó-ɲá	*!*				a. vələð-ó-lo	*!*			
b. vələð-ó-ɲá			*!		b. vələð-ó-lo			*	
c. vələð-ó-ɲá		*!			c. vələð-ó-lo		*!		
d. ɲá-vələð-ó				*	d. lo-vələð-ó		*!		*

- To avoid mobility (prefixation) of H-toned OM's in the other stem-tone categories (\*(8d), \*(9d)), all we need is for RTM to rank *above* the lowest-ranked tonal constraint in the other two cophonologies.

(8) H-toned OM + <b>All-H</b> stem ⇒ <i>suffix</i>					(9) H-toned OM + <b>No-H</b> stem ⇒ <i>suffix</i>				
/vələð-ó, ɲé/	ALN	DEP	RTM	INT	/vələð-ó, ɲá/	INT	DEP	RTM	ALN
a. vələð-ó-ɲá				**	a. vələð-ó-ɲá	*!*			
b. vələð-ó-ɲá		*!			b. vələð-ó-ɲá		*!		
c. vələð-ó-ɲá	*!				c. vələð-ó-ɲá				*
d. ɲá-vələð-ó			*!		d. ɲá-vələð-ó			*!	

- We can thus integrate mobility into the logic of the stem-tone system as follows:
  - Left-H:** acquire a left-edge H tone by moving the OM if possible, else through H-epenthesis
  - All-H:** acquire a left-edge H tone through H-spreading (never by moving the OM)
  - No-H:** be content without a left-edge H tone

## 6. Discussion & Conclusion: A Comparison with J&R

- Despite J&R's high-level description, their analysis of the All-H and No-H patterns (p. 289–292, exx. (34–39)) uses MAX-H, HAVE-H, and \*H — not **RIGHTMOST** — to rule out the relevant alternatives.
  - J&R (p. 290): "The position of **RIGHTMOST** is not crucial in [the All-H and No-H] patterns..."
- \* Removing J&R's extraneous constraints results in a simpler analysis (fewer constraints, fewer re-rankings) and yields a clearer picture of the relationship between tone and morpheme order in Moro:
  - OM mobility is tolerated only when **RIGHTMOST** ranks *very low*.
  - This ranking is found *only in the Left-H cophonology*.
- This confirms that **violable morphophonological alignment** (McCarthy & Prince 1993) is **central to the analysis of mobile affixation**, even when mobility is restricted by morphological category.